14 SIMPLIFICATION

YEAR : 1999

1. Simplify : सरल करें $1+\cfrac{1}{1+\cfrac{2}{2+\cfrac{3}{1+\cfrac{4}{5}}}}$

(a) $1\frac{11}{17}$ (b) $1\frac{5}{7}$

(c) $1\frac{6}{17}$ (d) $1\frac{21}{17}$

2. Simplify : सरल करें $1+\cfrac{2}{1+\cfrac{3}{1+\cfrac{4}{5}}}$

(a) $\frac{7}{4}$ (b) $\frac{4}{7}$ (c) $\frac{7}{5}$ (d) $\frac{3}{7}$

3. Evaluate :सरल करें

$$\frac{9|3-5|-5|4|\div 10}{-3(5)-2\times 4+2}$$

(a) $\frac{9}{10}$ (b) $-\frac{8}{17}$

(c) $-\frac{16}{19}$ (d) $\frac{4}{7}$

4. 5 –[4– {3–(3–3–6)}] is equal to :
5 –[4– {3–(3–3–6)}] के बराबर है :
(a) 10 (b) 6 (c) 4 (d) 0

5. Evaluate :सरल करें

$$\frac{-(4-6)^2-3(-2)+|-6|}{18-9\div 3\times 5}$$

(a) $\frac{3}{8}$ (b) $\frac{4}{7}$ (c) $\frac{5}{8}$ (d) $\frac{7}{4}$

6. Simplify : सरल करें $\cfrac{\frac{6}{3}\times\frac{7}{51}\text{ of }\frac{17}{5}-\frac{1}{3}}{\frac{2}{9}\times\frac{5}{7}\text{ of }\frac{28}{5}-\frac{2}{3}}$

(a) $\frac{1}{2}$ (b) 4 (c) 2 (d) $\frac{1}{4}$

7. 1 –[5–{2+(–5+6–2)2]} is equal to
1 –[5–{2+(–5+6–2)2]} के बराबर है :
(a) – 4 (b) 2 (c) 0 (d) – 2

8. Assume that

$\sqrt{13}$ = 3.605 (approximately)

$\sqrt{130}$ = 11.40 (approximately)

find the value of :

$\sqrt{1.3}+\sqrt{1300}+\sqrt{0.013}$

मान लें कि

$\sqrt{13}$ = 3.605 (लगभग)

$\sqrt{130}$ = 11.40 (लगभग)

$\sqrt{1.3}+\sqrt{1300}+\sqrt{0.013}$ का मान ज्ञात करें?
(a) 36.164 (b) 36.304
(c) 37.304 (d) 37.164

9. On simplification of

$\frac{(2.644)^2-(2.356)^2}{0.288}$ का सरलीकरण करने पर परिणाम क्या होगा?
(a) 1 (b) 4 (c) 5 (d) 6

10. Simplification of $\frac{(3.4567)^2-(3.4533)^2}{0.0034}$

का सरलीकरण करने पर परिणाम क्या होगा ?
(a) 6.91 (b) 7 (c) 6.81 (d) 7.1

11. The value of $\frac{(0.03)^2-(0.01)^2}{0.03-0.01}$ का मान ज्ञात करें ?
(a) 0.02 (b) 0.004
(c) 0.4 (d) 0.04

12. What is the square root of 0.09
0.09 का वर्गमूल क्या है ?
(a) 0.3 (b) 0.03 (c) 0.003 (d) 3.0

13. Find the value of

$\frac{(0.75)^3}{1-.75}+\left[0.75+(0.75)^2+1\right]$ का मान ज्ञात करें ?
(a) 4 (b) 3 (c) 2 (d) 1

14. $\sqrt{\frac{0.49}{0.25}}+\sqrt{\frac{0.81}{0.36}}$ is equal to : के बराबर है?

(a) $7\frac{9}{10}$ (b) $2\frac{9}{10}$ (c) $\frac{9}{10}$ (d) $9\frac{9}{10}$

15. If $\sqrt{x}\div\sqrt{441}$ =0.02, then value of x is:
यदि $\sqrt{x}\div\sqrt{441}$ =0.02, तो x का मान ज्ञात करें ?
(a) 1.64 (b) 2.64
(c) 1.764 (d) 0.1764

16. Find the value of
$\sqrt{4\times\sqrt{441}\times\sqrt{10000}}$ का मान ज्ञात करें?
(a) [illegible] (b) [illegible] (c) 4 (d) – 4

17. If the square root of 841 is 29, then 0.00000841 is equal to :
यदि 841का वर्गमूल 29 है, तो 0.00000841 किसके बराबर है?
(a) 0.029 (b) 0.0029
(c) 0.00029 (d) 0.29

18. The square root of a positive number less than 100 lies between :
100 से कम एक धनात्मक संख्या के वर्गमूल का मान इनमें से किसके बीच होगा ?
(a) 0 and 1000 (b) 0 and 10
(c) – 10 and 10 (d) – 100 and 100

19. By which smallest number should 5808 be multiplied so that it becomes a perfect square ?
5808 को किस न्यूनतम संख्या से गुणा किया जाए कि प्राप्त संख्या एक पूर्ण वर्ग हो ?
(a) 2 (b) 7 (c) 11 (d) 3

20. $\frac{\sqrt[3]{8}}{\sqrt{16}}\div\sqrt{\frac{100}{49}}\times\sqrt[3]{125}$ is equal to :के बराबर है ?

(a) 7 (b) $1\frac{3}{4}$ (c) $\frac{7}{100}$ (d) $\frac{4}{7}$

21. By which smallest number 1323 must be multiplied, so that it becomes a perfect cube ?
1323 को किस न्यूनतम संख्या से गुणा किया जाए कि प्राप्त संख्या एक पूर्ण घन हो ?
(a) 2 (b) 3 (c) 5 (d) 7

YEAR : 2000

22. On simplification 3034–(1002 ÷ 20.04) is equal to
3034 –(1002 ÷20.04) का हल किसके बराबर है?
(a) 3029 (b) 2984
(c) 2993 (d) 2543

23. When simplified, the expression

$(100)^{\frac{1}{2}}\times(0.001)^{\frac{1}{3}}-(0.0016)^{\frac{1}{4}}\times 3^0+\left(\frac{5}{4}\right)^{-1}$

is equal to : का मान ज्ञात करें ?
(a) 1.6 (b) 0.8 (c) 1.0 (d) 0

24. When $\left(\frac{1}{2}-\frac{1}{4}+\frac{1}{5}-\frac{1}{6}\right)$ is divided by $\left(\frac{2}{5}-\frac{5}{9}+\frac{3}{5}-\frac{7}{18}\right)$, the result is :

$\left(\frac{1}{2}-\frac{1}{4}+\frac{1}{5}-\frac{1}{6}\right)$ को जब $\left(\frac{2}{5}-\frac{5}{9}+\frac{3}{5}-\frac{7}{18}\right)$ से भाग दिया जाए है, तो परिणाम क्या होगा?

(a) $5\frac{1}{10}$ (b) $2\frac{1}{18}$ (c) $3\frac{1}{6}$ (d) $3\frac{3}{10}$

25. $(\sqrt{72}-\sqrt{18}\div\sqrt{12})$ is equal to:का मान है:

(a) $\sqrt{6}$ (b) $\sqrt{3}/2$

(c) $\sqrt{2}/3$ (d) $\sqrt{6}/2$

26. The value of $\frac{\sqrt{80}-\sqrt{112}}{\sqrt{45}-\sqrt{63}}$ का मान ज्ञात करें ?

(a) $\frac{3}{4}$ (b) $1\frac{3}{4}$ (c) $1\frac{1}{3}$ (d) $1\frac{7}{9}$

27. The square root of (272^2-128^2) is :
(272^2-128^2) का वर्गमूल क्या होगा?
(a) 256 (b) 200 (c) 240 (d) 144

28. The digit at the unit's place in the square root of 15876 is :
15876 के वर्गमूल में इकाई स्थान का अंक है ?
(a) 8 (b) 6 (c) 4 (d) 2

29. If the sum of two numbers is 22 and the sum of their squares is 404, then the product of the numbers is:
यदि दो संख्याओं का योग 22 है, और उनके वर्गों का योग 404 है, तो उन संख्याओं का गुणनफल ज्ञात करें?
(a) 40 (b) 44 (c) 80 (d) 8

30. One-third of the square root of which number is 0.001 ?
किस संख्या के वर्गमूल का एक तिहाई 0.001 के बराबर है ?
(a) 0.0009 (b) 0.000001
(c) 0.00009 (d) None of the above

31. 1008 divided by which single digit number gives a perfect square ?
1008 को किस संख्या से भाग दिया जाए कि परिणाम पूर्ण वर्ग हो?
(a) 9 (b) 4 (c) 8 (d) 7

32. $\sqrt[3]{\frac{72.9}{0.4096}}$ is equal to : के बराबर है
(a) 0.5625 (b) 5.625
(c) 182 (d) 13.6

33. $(5.5)^3-(4.5)^3$ is equal to : के बराबर है ?
(a) 1 (b) 75
(c) 74.25 (d) 75.25

34. Which of the following is a perfect square as well as a cube ?
इनमें से कौन सी संख्या एक पूर्ण वर्ग भी है और एक पूर्ण घन भी है ?
(a) 81 (b) 125 (c) 343 (d) 64

35. When the square of a natural number subtracted from its cube, the result is 48. Find the number:
एक प्राकृत संख्या का वर्ग उसी संख्या के घन से घटाया जाता है तो 48 प्राप्त होता है, तो संख्या ज्ञात करें?
(a) 8 (b) 6 (c) 5 (d) 4

YEAR : 2002

36. The value of $\frac{1}{3+\frac{1}{2-\frac{1}{\frac{7}{9}}}}+\frac{17}{22}$ का मान क्या है?
(a) $\frac{12}{22}$ (b) $\frac{22}{5}$ (c) $\frac{5}{22}$ (d) 1

37. If $x=1+\frac{1}{1+\frac{1}{1+\frac{1}{1+\frac{1}{2}}}}$ then, the value of $2x+\frac{7}{4}$ is
यदि $=1+\frac{1}{1+\frac{1}{1+\frac{1}{1+\frac{1}{2}}}}$ है, तो $2x+\frac{7}{4}$ का मान ज्ञात करें ?
(a) 3 (b) 4 (c) 5 (d) 6

38. Simplify :सरल करें $\frac{19}{43}+\frac{1}{2+\frac{1}{3+\frac{1}{1+\frac{1}{4}}}}:$
(a) 1 (b) $\frac{19}{43}$ (c) $\frac{43}{19}$ (d) $\frac{38}{43}$

39. Simplify: सरल करें
$8\frac{1}{2}-\left[3\frac{1}{4}+\left\{1\frac{1}{4}-\frac{1}{2}\left(1\frac{1}{2}-\frac{1}{3}-\frac{1}{6}\right)\right\}\right]$
(a) $4\frac{1}{2}$ (b) $4\frac{1}{6}$ (c) $9\frac{1}{2}$ (d) $\frac{2}{9}$

40. If $\frac{50}{*}=\frac{*}{12\frac{1}{2}}$, then the value of * is:
यदि $\frac{50}{*}=\frac{*}{12\frac{1}{2}}$ है, तो * का मान ज्ञात करें ?
(a) $\frac{25}{2}$ (b) $\frac{4}{25}$ (c) 4 (d) 25

41. The value of $(0.008\times0.01\times0.072+(0.12\times0.004)$ का मान ज्ञात करें ?
(a) 1.2 (b) 0.12 (c) 0.012 (d) 1.02

42. The value of $3\times\frac{3}{\frac{5}{6}\div\frac{2}{3}\text{ of }1\frac{1}{4}}$ का मान ज्ञात करें ?
(a) 2 (b) 1 (c) $\frac{1}{2}$ (d) $\frac{2}{3}$

43. Find the sum of the following :
$\frac{1}{9}+\frac{1}{6}+\frac{1}{12}+\frac{1}{20}+\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}$
निम्नलिखित का योग ज्ञात करें :
(a) $\frac{1}{2}$ (b) 0 (c) $\frac{1}{9}$ (d) 1

44. The value of $25-5[2+3\{2-2(5-3)+5\}-10]\div4$ का मान क्या है?
(a) 5 (b) 23.25
(c) 23.75 (d) 25

45. Find the value of * in the following
$1\frac{2}{3}\div\frac{2}{7}\times\frac{*}{7}=1\frac{1}{4}\times\frac{2}{3}\div\frac{1}{6}$ में * का मान क्या होगा?
(a) $\frac{1}{6}$ (b) 0.6
(c) 0.006 (d) 6

46. If $x=\frac{1}{2+\frac{1}{2}}$ then $\frac{1}{x}=?$
यदि $x=\frac{1}{2+\frac{1}{2}}$ तो $\frac{1}{x}=?$ का मान ज्ञात करें।
(a) $\frac{2}{5}$ (b) $\frac{5}{2}$ (c) $\frac{3}{5}$ (d) $\frac{1}{2}$

47. The value of $\frac{5}{1\frac{7}{8}\text{ of }1\frac{1}{3}}\times\frac{2\frac{1}{10}}{3\frac{1}{2}}\text{ of }1\frac{1}{4}$
का मान क्या होगा?
(a) $1\frac{1}{2}$ (b) 0.05 (c) 1 (d) 2

48. $\frac{9}{20}-\left[\frac{1}{5}+\left\{\frac{1}{4}+\left(\frac{5}{6}-\overline{\frac{1}{3}+\frac{1}{2}}\right)\right\}\right]$ is equal to

के बराबर है?

(a) 0 (b) 1 (c) $\frac{9}{20}$ (d) $\frac{9}{10}$

49. $\frac{0.8\overline{3}\div 7.5}{2.\overline{321}-0.0\overline{98}}$ is equal to के बराबर है?

(a) 0.6 (b) 0.1
(c) 0.06 (d) 0.05

50. For what value of *, statement

$\left[\frac{(*)}{21}\times\frac{(*)}{189}\right]=1$ is correct ?

* के किस मान के लिए कथन

$\left[\frac{(*)}{21}\times\frac{(*)}{189}\right]=1$ सत्य है?

(a) 3969 (b) 147 (c) 63 (d) 21

51. The value of

$\sqrt{\frac{(0.1)^2+(0.01)^2+(0.009)^2}{(0.01)^2+(0.001)^2+(0.0009)^2}}$ का

मान क्या होगा?

(a) 10^2 (b) 10 (c) 0.1 (d) 0.01

52. The value of

$\sqrt{\frac{(0.03)^2+(0.21)^2+(0.065)^2}{(0.003)^2+(0.021)^2+(0.0065)^2}}$ का

मान ज्ञात करें।

(a) 0.1 (b) 10 (c) 10^2 (d) 10^3

53. The sum of

$\sqrt{0.01}+\sqrt{0.81}+\sqrt{1.21}+\sqrt{0.0009}$

का योग क्या है?

(a) 2.1 (b) 2.13 (c) 2.03 (d) 2.11

54. The value of

$\sqrt{\frac{(6.1)^2+(61.1)^2+(611.1)^2}{(0.61)^2+(6.11)^2+(61.11)^2}}$

का मान क्या है?

(a) 0.1 (b) 1.1 (c) 10 (d) 100

55. The value of $\sqrt{0.00044\ldots}$ is equal to;

$\sqrt{0.00044\ldots}$ का मान किसके बराबर है?

(a) 0.21 (b) 0.0021
(c) 0.021 (d) 0.00021

56. The value of $\frac{\sqrt{0.441}}{\sqrt{0.625}}$ is equal to :

$\frac{\sqrt{0.441}}{\sqrt{0.625}}$ का मान किसके बराबर है?

(a) 0.048 (b) 0.84 (c) 0.48 (d) 0.084

57. The square root of

$\frac{0.342\times 0.684}{0.000342\times 0.000171}$ का वर्गमूल क्या है?

(a) 250 (b) 2500
(c) 2000 (d) 4000

58. $\sqrt{0.00060516}$ is equal to

$\sqrt{0.00060516}$ के बराबर है?

(a) 0.0246 (b) 0.00246
(c) 0.246 (d) 0.000246

59. The square root of $\frac{9.5\times 0.085}{0.017\times 0.019}$ का

वर्गमूल ज्ञात करें।

(a) 0.5 (b) 5 (c) 50 (d) 500

60. Find the value of

$\sqrt{248+\sqrt{52+\sqrt{144}}}$ का मान ज्ञात करें।

(a) – 16 (b) ± 16 (c) 16 (d) 16.2

61. If $(102)^2 = 10404$ then, the value of $\sqrt{104.04}+\sqrt{1.0404}+\sqrt{0.010404}$ is equal to

यदि $(102)^2 = 10404$ है, तो

$\sqrt{104.04}+\sqrt{1.0404}+\sqrt{0.010404}$ का मान किसके बराबर है?

(a) 0.306 (b) 0.0306
(c) 11.122 (d) 11.322

62. If $\sqrt{4096}=64$, then the value of $\sqrt{40.96}+\sqrt{0.4096}+\sqrt{0.004096}+\sqrt{0.00004096}$ up to two place of decimals is :

यदि $\sqrt{4096}=64$ है, तो $\sqrt{40.96}+\sqrt{0.4096}+\sqrt{0.004096}+\sqrt{0.00004096}$ का मान दशमलव के दो अंको तक क्या होगा?

(a) 7.09 (b) 7.10 (c) 7.11 (d) 7.12

63. Three fifth of the square of a certain number is 126.15, What is the number?

किसी संख्या के वर्ग का $\frac{3}{5}$ भाग 126.15 है, तो संख्या क्या है?

(a) 210.25 (b) 75.69
(c) 14.5 (d) 145

64. The least number that must be subtracted from 63522 to make the result a perfect square is :

63522 में से कौन-सी संख्या घटायी जाए कि परिणाम पूर्ण वर्ग हो?

(a) 18 (b) 20 (c) 24 (d) 30

65. By which smallest number should 20184 be multiplied so that it becomes a perfect square ?

20184 में किस न्यूनतम संख्या से गुणा किया जाए कि परिणाम पूर्ण वर्ग हो?

(a) 2 (b) 3 (c) 5 (d) 6

66. If cube root of 175616 is 56, then the value of $\sqrt[3]{175.616}+\sqrt[3]{0.175616}+\sqrt[3]{0.000175616}$ is equal to :

175616 का घनमूल 56 है, तो

$\sqrt[3]{175.616}+\sqrt[3]{0.175616}+\sqrt[3]{0.000175616}$ का मान ज्ञात करें।

(a) 0.168 (b) 62.16
(c) 6.216 (d) 6.116

YEAR 2003

67. The simplification of $\frac{5}{3+\frac{3}{1-\frac{2}{3}}}$ का

सरलीकरण क्या होगा?

(a) 5 (b) $\frac{5}{3}$ (c) $\frac{5}{12}$ (d) $\frac{3}{5}$

68. If $2=x+\frac{1}{1+\frac{1}{3+\frac{1}{4}}}$, then the value of x is :

यदि $2=x+\frac{1}{1+\frac{1}{3+\frac{1}{4}}}$ है, तो x का मान ज्ञात करें।

(a) $\frac{18}{17}$ (b) $\frac{21}{17}$ (c) $\frac{13}{17}$ (d) $\frac{12}{17}$

69. Find the value of

$\frac{2}{1+\frac{1}{1-\frac{1}{2}}}\times\frac{3}{\frac{5}{6}\text{ of }\frac{3}{2}\div 1\frac{1}{4}}$ का मान ज्ञात करें।

(a) 6 (b) 8 (c) 4 (d) 2

70. Simplify :सरल करें।

$1+\frac{4}{2+\frac{3}{5-\frac{1}{2}}}-\frac{1}{2}(10\div 2)$

(a) 1 (b) 0 (c) $-\frac{15}{2}$ (d) $-\frac{1}{2}$

71. Simplify: सरल करें।

$$\left[\left(1+\frac{1}{10+\frac{1}{10}}\right)\times\left(1+\frac{1}{10+\frac{1}{10}}\right)-\left(1-\frac{1}{10+\frac{1}{10}}\right)\times\left(1-\frac{1}{10+\frac{1}{10}}\right)\right]$$

$$\div\left[\left(1+\frac{1}{10+\frac{1}{10}}\right)+\left(1-\frac{1}{10+\frac{1}{10}}\right)\right]$$

(a) $\frac{100}{101}$ (b) $\frac{90}{101}$ (c) $\frac{20}{101}$ (d) $\frac{101}{100}$

72. If $\frac{1120}{\sqrt{p}} = 80$, then P is equal to

यदि $\frac{1120}{\sqrt{p}} = 80$ है, तो P का मान क्या है?

(a) 14 (b) 140 (c) 196 (d) 225

73. $\frac{3\frac{1}{4}-\frac{4}{5}\text{ of }\frac{5}{6}}{4\frac{1}{3}\div\frac{1}{5}-\left(\frac{3}{10}+21\frac{1}{5}\right)}-\left(1\frac{2}{3}\text{ of }1\frac{1}{2}\right)$ is

equal to के बराबर है?

(a) 9 (b) $11\frac{1}{2}$ (c) 13 (d) $15\frac{1}{2}$

74. Simplify सरल करें

$$\left[3\frac{1}{4}\div\left\{1\frac{1}{4}-\frac{1}{2}\left(2\frac{1}{2}-\frac{1}{4}-\frac{1}{6}\right)\right\}\right]\div\left(\frac{1}{2}\text{ of }4\frac{1}{3}\right)$$

(a) 18 (b) 36 (c) 39 (d) 78

75. The value of

$$\frac{0.1\times0.1\times0.1+0.2\times0.2\times0.2+0.3\times0.3\times0.3-3\times0.1\times0.2\times0.3}{0.1\times0.1+0.2\times0.2+0.3\times0.3-0.1\times0.2-0.2\times0.3-0.3\times0.1}$$

का मान ज्ञात करें।

(a) 0.006 (b) 0.6
(c) 0 (d) 0.2

76. $\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}+\frac{1}{110}=?$

(a) $\sqrt{2}\frac{2}{27}$ (b) $\frac{1}{9}$

(c) $\frac{5}{27}$ (d) $\frac{6}{55}$

77. If यदि $I = \frac{3}{4}\div\frac{5}{6}$, $II = 3\div[(4\div5)\div6]$, $III = [3\div(4\div5)]\div6$, $IV = 3\div4\,(5\div6)$ then तो

(a) I and II are equal (I और II बराबर है)
(b) I and IV are equal (I और IV बराबर है)
(c) I and III are equal (I और III बराबर है)
(d) All are equal (सभी बराबर है)

78. The value of $1\div[1+1\div\{1+1\div(1+1\div2)\}]$ का मान क्या है?

(a) 1 (b) $\frac{5}{8}$ (c) 2 (b) $\frac{1}{2}$

79. The simplified value of

$$\frac{\frac{1}{3}\div\frac{1}{3}\times\frac{1}{3}}{\frac{1}{3}\div\frac{1}{3}\text{ of }\frac{1}{3}}-\frac{1}{9}$$ is equal to : का सरलीकृत मान है?

(a) 0 (b) 1 (c) $\frac{1}{3}$ (d) $\frac{1}{9}$

80. Simplify :सरल करें

$$2\frac{\frac{3}{4}}{\frac{5}{1\frac{1}{6}}}\div\frac{7}{8}\times\left(\frac{1}{3}+\frac{1}{4}\right)+\frac{5}{7}\div\frac{3}{4}\text{ of }\frac{3}{7}$$

(a) $\frac{56}{77}$ (b) $\frac{49}{80}$ (c) $\frac{2}{3}$ (d) $3\frac{2}{9}$

81. The simplification of

$1.36-2.05+1.33$ equals : का मान क्या होगा?

(a) 2.60 (b) $2.\overline{61}$

(c) 2.64 (d) $2.\overline{64}$

82. The value of

$$\frac{0.9\times0.9\times0.9+0.2\times0.2\times0.2+0.3\times0.3\times0.3-3\times0.9\times0.2\times0.3}{0.9\times0.9+0.2\times0.2+0.3\times0.3-0.9\times0.2-0.2\times0.3-0.3\times0.9}$$

का मान क्या है?

(a) 1.4 (b) 0.054 (c) .8 (d) 1.0

83. Simplify : सरल करें :

$$\left(0.\overline{1}\right)^2\left\{1-9\left(0.\overline{16}\right)^2\right\}$$

(a) $-\frac{1}{162}$ (b) $\frac{1}{108}$

(c) $\frac{7696}{10^6}$ (d) $\frac{1}{109}$

84. Simplify : सरल करें

$$\frac{1+\frac{1}{2}}{1-\frac{1}{2}}\div\frac{4}{7}\left(\frac{2}{5}+\frac{3}{10}\right)\text{ of }\frac{\frac{1}{2}+\frac{1}{3}}{\frac{1}{2}-\frac{1}{3}}$$

(a) $\frac{2}{3}$ (b) $37\frac{1}{2}$

(c) $\frac{3}{2}$ (d) $13\frac{3}{8}$

85. Simplify : सरल करें :

$[0.9-\{2.3-(7.2-(7.1-5.4-3.5))\}]$

(a) 0.18 (b) 1.8 (c) 0 (d) 2.6

86. $(32)^3+(111)^3+3\times32\times79\times111$ is equal to के बराबर है?

(a) 10000 (b) 0
(c) 30007 (d) 1

87. $\left(\frac{5}{2}+\frac{3}{2}\right)\left(\frac{25}{4}-\frac{15}{4}+\frac{9}{4}\right)$ is equal to के बराबर है?

(a) 38 (b) 19 (c) 37 (d) 36

88. $(0.2\times0.2+0.01)\{0.1\times0.1+0.02\}^{-1}$ is equal to के बराबर है?

(a) $\frac{5}{3}$ (b) $\frac{41}{12}$ (c) $\frac{41}{4}$ (d) $\frac{9}{5}$

89. $\frac{1}{2}+\left\{4\frac{3}{4}-\left(3\frac{1}{6}-2\frac{1}{3}\right)\right\}$ is equal to के बराबर है?

(a) $3\frac{2}{3}$ (b) $1\frac{1}{4}$

(c) $4\frac{5}{12}$ (d) $1\frac{2}{3}$

90. The simplification of

$\frac{1}{8}+\frac{1}{8^2}+\frac{1}{8^3}+\frac{1}{8^4}+\frac{1}{8^5}$ upto three-place of decimals yields का सरलीकरण दशमलव के तीन स्थानों तक क्या होगा?

(a) 0.143 (b) 0.163
(c) 0.215 (d) 0.715

91. Simplify : सरल करें :

$$\sqrt{(12.1)^2-(8.1)^2\div\left[(0.25)^2+(0.25)(19.95)\right]}$$

(a) 1 (b) 2 (c) 3 (d) 4

92. The value of

$$\frac{0.051\times0.051\times0.051+0.041\times0.041\times0.041}{0.051\times0.051-0.051\times0.041+0.041\times0.041}$$

का मान क्या है?

(a) 0.92 (b) 0.092
(c) 0.0092 (d) 0.00092

93. The value of $\sqrt{5+\sqrt{11+\sqrt{19+\sqrt{29+\sqrt{49}}}}}$ का मान क्या है?
(a) 3 (b) 9 (c) 7 (d) 5

94. The value of $\frac{(75.8)^2-(55.8)^2}{20}$ का मान क्या है?
(a) 20 (b) 40
(c) 121.6 (d) 131.6

95. The value of $\frac{4-\sqrt{0.04}}{4+\sqrt{0.4}}$ is close to

$\frac{4-\sqrt{0.04}}{4+\sqrt{0.4}}$ का मान किसके निकटतम है?
(a) 0.4 (b) 0.8 (c) 1.0 (d) 1.4

96. $\sqrt{0.00004761}$ equals के बराबर है?
(a) 0.069 (b) 0.0069
(c) 0.00069 (d) 0.0609

97. If $\sqrt{2}$ = 1.414, the value of $\frac{\sqrt{2}-1}{\sqrt{2}+1}$ is nearest to

यदि $\sqrt{2}$ = 1.414 है, तो $\frac{\sqrt{2}-1}{\sqrt{2}+1}$ का मान किसके निकटतम है?
(a) 0.172 (b) 0.414
(c) 0.586 (d) 1.414

98. $\sqrt{\frac{0.00001225}{0.00005329}}$ is equal to : के बराबर है?
(a) $\frac{25}{77}$ (b) $\frac{35}{73}$ (c) $\frac{35}{77}$ (d) $\frac{25}{73}$

99. Given that $\sqrt{574.6}$ = 23.97, $\sqrt{5746}$ = 75.8 then $\sqrt{0.00005746}$

$\sqrt{574.6}$ = 23.97, $\sqrt{5746}$ = 75.8 दिया गया है, तो $\sqrt{0.00005746}$:
(a) 0.002397 (b) 0.0002397
(c) 0.0007580 (d) 0.007580

100. $\sqrt{(0.798)^2+0.404\times0.798+(0.202)^2}+1=?$
(a) 0 (b) 2
(c) 1 (d) 0.404

101. The value of $\sqrt{11.981+7\sqrt{1.2996}}$ is closest to का मान किसके निकटतम है?
(a) 5.1 (b) 4.9 (c) 4.5 (d) 4.1

102. How many positive integers less than 1000 are multiples of 11 whose square roots are whole numbers
1000 से कम कितनी धनात्मक संख्याऐं है, जो 11 के गुणक है तथा उनका वर्गमूल एक पूर्ण संख्या है?
(a) 2 (b) 4 (c) 8 (d) 11

103. What is the least number which should be subtracted from 0.000326, to have perfect square ?
0.000326 में से कौन-सी न्यूनतम संख्या घटायी जाए कि परिणाम एक पूर्ण वर्ग हो?
(a) 0.000004 (b) 0.000002
(c) 0.04 (d) 0.02

104. The value of $\sqrt[3]{\frac{7}{875}}$ is equal to

$\sqrt[3]{\frac{7}{875}}$ का मान किसके बराबर है?
(a) $\frac{1}{3}$ (b) $\frac{1}{15}$ (c) $\frac{1}{4}$ (d) $\frac{1}{5}$

105. Sum of digits of the smallest number by which 1440 be multiplied so that it becomes a perfect cube, is
उस संख्या के अंको का योग क्या होगा जिससे 1440 को गुणा करने पर परिणाम एक पूर्ण घन हो?
(a) 4 (b) 6 (c) 7 (d) 8

106. The least possible value of A for which 90 × A is a perfect cube is
A का न्यूनतम मान क्या है जिसके लिए 90 × A एक पूर्ण घन है?
(a) 200 (b) 300 (c) 500 (d) 600

YEAR 2004

107. $\cfrac{5\frac{9}{14}}{5+\cfrac{3}{3+\cfrac{1}{3}}}$ is equal to के बराबर है :
(a) 1 (b) 1.5 (c) 2 (d) 2.5

108. $\cfrac{2}{2+\cfrac{2}{3+\cfrac{2}{3+\frac{2}{3}}}}\times0.39$ is simplified to

का सरलीकरण है:
(a) $\frac{1}{3}$ (b) 2
(c) 6 (d) None of these

109. $1+\cfrac{1}{1+\frac{1}{2}}$ is equal to के बराबर है:
(a) 3 (b) $\frac{3}{2}$ (c) $\frac{2}{3}$ (d) $\frac{5}{3}$

110. $8.7-\left[7.6-\left\{6.5-\left(5.4-\overline{4.3-2}\right)\right\}\right]$ is simplified to: का सरलीकरण क्या होगा?
(a) 2.5 (b) 3.5 (c) 4.5 (d) 5.5

111. The simplified value of $[(0.111)^3+(0.222)^3-(0.333)^3+(0.333)^2(0.222)]^3$ का सरलीकृत मान क्या होगा?
(a) 0.999 (b) 0
(c) 0.888 (d) 0.111

112. $\cfrac{1\frac{1}{4}\div1\frac{1}{2}}{\left(\frac{1}{15}+1-\frac{9}{10}\right)}$ is equal to : के बराबर है :
(a) 3 (b) 6 (c) $\frac{2}{5}$ (d) 5

113. $\cfrac{\frac{1}{2}-\frac{2}{3}+\frac{3}{5}}{\frac{2}{3}-\frac{4}{5}+\frac{5}{7}}\div\cfrac{\frac{1}{2}+\frac{1}{3}-\frac{3}{5}}{\frac{2}{3}+\frac{1}{3}-\frac{4}{5}}$ is simplified to का सरलीकरण है?
(a) $-\frac{10}{3}$ (b) $-\frac{3}{10}$ (c) 1 (b) – 2

114. The simplification of $\left(0.\overline{63}+0.\overline{37}+0.\overline{80}\right)$ yields the result
को सरल करने पर मान क्या होगा?
(a) $1.\overline{80}$ (b) $1.\overline{81}$ (c) $1.\overline{79}$ (d) 1.80

115. $\frac{(4.53-3.07)^2}{(3.07-2.15)(2.15-4.53)}+\frac{(3.07-2.15)^2}{(2.15-4.53)(4.53-3.07)}+\frac{(2.15-4.53)^2}{(4.53-3.07)(3.07-2.15)}$ is simplified to का सरलीकृत मान है?
(a) 0 (b) 1 (c) 2 (d) 3

116. $\frac{17}{15}\times\frac{17}{15}+\frac{2}{15}\times\frac{2}{15}-\frac{17}{15}\times\frac{4}{15}$ is simplified to का सरलीकृत मान है?
(a) 0 (b) 1 (c) 2 (d) 3

117. $\sqrt{\frac{0.25}{0.0009}}\times\sqrt{\frac{0.09}{0.36}}$ is equal to :
के बराबर है?
(a) $\frac{5}{6}$ (b) $7\frac{1}{6}$ (c) $7\frac{1}{3}$ (d) $8\frac{1}{3}$

118. The square root of $0.\overline{4}$ is :
$0.\overline{4}$ का वर्गमूल है?
(a) $0.\overline{8}$ (b) $0.\overline{6}$ (c) $0.\overline{7}$ (d) $0.\overline{9}$

119. The value of $\sqrt{32}-\sqrt{128}+\sqrt{50}$ correct to 3 places of decimal is :

$\sqrt{32}-\sqrt{128}+\sqrt{50}$ का मान दशमलव के तीन अंकों तक क्या होगा ?

(a) 1.732 (b) 1.141
(c) 1.414 (d) 1.441

120. The square root of

$\left(7+3\sqrt{5}\right)\left(7-3\sqrt{5}\right)$ का वर्गमूल क्या है?

(a) 4 (b) $\sqrt{5}$ (c) $3\sqrt{5}$ (d) 2

121. The value of

$\sqrt{400}+\sqrt{0.0400}+\sqrt{0.000004}$ का मान क्या है?

(a) 0.222 (b) 20.22
(c) 20.202 (d) 2.022

122. If $\sqrt{3}$ = 1.7321, the value of

$\sqrt{192}-\frac{1}{2}\sqrt{48}-\sqrt{75}$, correct to 3 place of decimal, is

यदि $\sqrt{3}$ = 1.7321 है, तो

$\sqrt{192}-\frac{1}{2}\sqrt{48}-\sqrt{75}$ का मान दशमलव का तीन अंको तक क्या है?

(a) 8.661 (b) 4.331
(c) 1.732 (d) –1.732

123. $\sqrt{\frac{48.4}{0.289}}$ is equal to के बराबर है?

(a) $129\frac{7}{17}$ (b) $1\frac{5}{17}$

(c) $12\frac{16}{17}$ (d) $12\frac{1}{17}$

124. The number, whose square is equal to the difference of the squares of 75.15 and 60.12, is
वह कौन-सी संख्या है जिसका वर्ग 75.15 और 60.12 के वर्गों के अंतर के बराबर है?

(a) 46.09 (b) 48.09
(c) 45.09 (d) 47.09

125. The sum of the squares of two numbers is 386. If one of the number is 5, the other will be :
दो संख्याओं के वर्गों का योग 386 है. यदि एक संख्या 5 है, तो दूसरी संख्या क्या होगी ?

(a) 18 (b) 19 (c) 15 (d) 20

126. The sum of the cubes of the numbers 22, – 15 and – 7 is equal to
22, – 15 और – 7 के घनों का योग क्या है?

(a) 6930 (b) 9630
(c) 3 (d) 0

127. The sum of the digits of the smallest number which, when multiplied by 1800, gives a perfect cube, is
उस संख्या के अंको का योग क्या होगा जिससे 1800 को गुणा करने पर परिणाम एक पूर्ण घन हो।

(a) 2 (b) 3 (c) 6 (d) 8

YEAR : 2005

128. The value of $\frac{2}{3}\times\frac{3}{\frac{5}{6}+\frac{2}{3}\text{ of }1\frac{1}{4}}$ का मान क्या है?

(a) 2 (b) 1 (c) $\frac{1}{2}$ (d) $\frac{2}{3}$

129. $\left(4\frac{11}{15}+\frac{15}{71}\right)^2-\left(4\frac{11}{15}-\frac{15}{71}\right)^2$ is equal to: के बराबर है?

(a) 1 (b) 2 (c) 3 (d) 4

130. The value of

$\frac{0.1\times0.1\times0.1+0.02\times0.02\times0.02}{0.2\times0.2\times0.2+0.04\times0.04\times0.04}$ का मान क्या है?

(a) 0.125 (b) 0.625
(c) 0.25 (d) 0.5

131. If * represents a number, then the value of * in $5\frac{3}{*}\times3\frac{1}{2}=19$ is :
यदि * किसी संख्या को अंकित करता है, तो $5\frac{3}{*}\times3\frac{1}{2}=19$ में * का मान क्या है?

(a) 7 (b) 4 (c) 6 (d) 2

132. $\left(\sqrt{2}+\frac{1}{\sqrt{2}}\right)^2$ equal to : के बराबर है?

(a) $2\frac{1}{2}$ (b) $3\frac{1}{2}$ (c) $4\frac{1}{2}$ (d) $5\frac{1}{2}$

133. The value of $(0.98)^3\times(0.02)^3+3\times0.98\times0.02-1$ का मान क्या है?

(a) 1.98 (b) 1.09 (c) 1 (d) 0

134. (71 × 29+27×15+8×4) equals के बराबर है?

(a) 3450 (b) 3458
(c) 2496 (d) None of these

135. (0.05 × 5 – 0.005 × 5) equals के बराबर है?

(a) 2.250 (b) 0.225
(c) 0.0225 (d) 0.275

136. The value of

$\sqrt[3]{\frac{0.2\times0.2\times0.2+0.04\times0.04\times0.04}{0.4\times0.4\times0.4+0.08\times0.08\times0.08}}$

का मान क्या है?

(a) 0.5 (b) 0.25 (c) 0.75 (d) 0.125

137. The square root of $\frac{\left(3\frac{1}{4}\right)^4-\left(4\frac{1}{3}\right)^4}{\left(3\frac{1}{4}\right)^2-\left(4\frac{1}{3}\right)^2}$

का वर्गमूल क्या है?

(a) $7\frac{1}{12}$ (b) $5\frac{5}{12}$

(c) $1\frac{1}{12}$ (d) $1\frac{7}{12}$

138. The smallest number added to 680621 to make the sum a perfect square is
680621 में कौन-सी न्यूनतम संख्या जोड़ी जाए कि योग एक पूर्ण वर्ग हो?

(a) 4 (b) 5 (c) 6 (d) 8

139. The smallest positive integer when multiplied by 392, the product is a perfect square, is
वह न्यूनतम धनात्मक पूर्णांक ज्ञात करें जिससे 392 को गुणा करने पर गुणनफल एक पूर्ण वर्ग होता है?

(a) 6 (b) 5 (c) 3 (d) 2

140. Which smallest number must be added to 2203 so that we get a perfect square ?
2203 में वह कौन-सी न्यूनतम संख्या जोड़ी जाए कि परिणाम एक पूर्ण वर्ग हो?

(a) 1 (b) 3 (c) 6 (d) 8

141. The number, whose square is equal to the difference between the squares of 975 and 585, is:
वह कौन-सी संख्या है जिसका वर्ग 975 और 585 के वर्गों के अंतर के बराबर है?

(a) 780 (b) 390 (c) 1560 (d) 130

142. If the sum and difference of two number are 20 and 8 respectively, then the difference of their squares is:
यदि दो संख्याओं के योग तथा अंतर क्रमश: 20 और 8 हैं, तो उनके वर्गों का अंतर ज्ञात करें?

(a) 12 (b) 28 (c) 80 (d) 160

143. The sum of the squares of two positive integers is 100 and the difference of their squares is 28. The sum of the numbers is:
दो धनात्मक पूर्णांको के वर्गों का योग 100 है और उनके वर्गों के अंतर 28 है, तो उन संख्याओं का योग क्या है?

(a) 12 (b) 13 (c) 14 (d) 15

144. Which smallest number must be added to 710 so that the sum is a perfect cube ?
710 में वह कौन-सी न्यूनतम संख्या जोड़ी जाए कि योग एक पूर्ण घन हो ?

(a) 29 (b) 19 (c) 11 (d) 21

YEAR : 2006

145. $\frac{13}{48}$ is equal to

$\frac{13}{48}$ के बराबर है?

(a) $\cfrac{1}{3+\cfrac{1}{1+\cfrac{1}{16}}}$ (b) $\cfrac{1}{2+\cfrac{1}{1+\cfrac{1}{8}}}$

(c) $\cfrac{1}{3+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{8}}}}$ (d) $\cfrac{1}{3+\cfrac{1}{1+\cfrac{1}{2+\cfrac{1}{4}}}}$

146. The value of $1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{2}{3}}}}}$ का मान क्या है?

(a) $\frac{21}{13}$ (b) $\frac{17}{2}$ (c) $\frac{34}{21}$ (d) $\frac{8}{5}$

147. $\frac{(3.63)^2-(2.37)^2}{3.63+2.37}$ is equal to के बराबर है?

(a) 6 (b) 1.36 (c) 2.26 (d) 1.26

148. The number of perfect square numbers between 50 and 1000 is
50 और 1000 के बीच कितनी पूर्ण वर्ग संख्याऐं है?
(a) 21 (b) 22 (c) 23 (d) 24

149. If the product of four consecutive natural numbers increased by a natural number p is a perfect square; then the value of p is
यदि चार लगातार प्राकृत संख्याओं के गुणनफल में एक प्राकृत संख्या P जोड़ दी जाए तो परिणाम पूर्ण वर्ग हो जाता है, तो P का मान ज्ञात करें।
(a) 8 (b) 4 (c) 2 (d) 1

YEAR : 2007

150. $(256)^{0.16}\times(16)^{0.18}$ is equal to के बराबर है?
(a) 4 (b) 16
(c) 64 (d) 256.25

151. $\left(\frac{1}{3.5}+\frac{1}{5.7}+\frac{1}{7.9}+\frac{1}{9.11}+\frac{1}{11.13}+\frac{1}{13.15}\right)$ is equal to के बराबर है?

(a) $\frac{2}{45}$ (b) $\frac{2}{25}$ (c) $\frac{7}{45}$ (d) $\frac{2}{15}$

152. $(53\times 87+159\times 21+106\times 25)$ is equal to के बराबर है?
(a) 16000 (b) 1060
(c) 10600 (d) 60100

153. The number of digits in the square root of 625686734489 is
625686734489 के वर्गमूल में कितने अंक है?
(a) 4 (b) 5 (c) 6 (d) 7

154. The smallest number which should be added to the number 8958 so that the result is a perfect square is
8958 में वह कौन-सी न्यूनतम संख्या जोड़ी जाए कि परिणाम एक पूर्ण वर्ग हो?
(a) 69 (b) 67 (c) 77 (d) 79

155. Given that $\sqrt{24}$ is approximately equal to 4.898. $\sqrt{\frac{8}{3}}$ is nearly equal to

दिया गया है कि $\sqrt{24}=4.898$ है, तो $\sqrt{\frac{8}{3}}$ का मान किसके निकटतम है?
(a) 0.544 (b) 1.333
(c) 1.633 (d) 2.666

156. There are some boys and girls in a room. The square of the number of the girls is less than the square of the number of boys by 48. If there were two more girls, the number of boys would have been the same as that of the girls. The total number of the boys and girls in the room are
एक कमरे में कुछ लड़के तथा लड़कियाँ है। लड़कियों की संख्या का वर्ग लड़कों की संख्या के वर्ग से 28 कम है। यदि दो लड़कियाँ और आ जाए तो लड़के तथा लड़कियों की संख्या बराबर हो जाती है, तो कमरे में लड़के तथा लड़कियों की कुल संख्या क्या है?
(a) 56 (b) 14 (c) 10 (d) 7

157. If the sum of the squares of three consecutive natural numbers is 110, then the smallest of these natural numbers is :
दि तीन लगातार प्राकृत संख्याओं के वर्गों का योग 110 है, तो उनमें से सबसे छोटी प्राकृत संख्या क्या है?
(a) 8 (b) 6 (c) 7 (d) 5

158. The product of two whole numbers is 37. The square root of the difference of the numbers is
दो पूर्ण संख्याओं का गुणनफल 37 है, तो उन संख्याओं के अंतर का वर्गमूल क्या होगा?
(a) 8 (b) 7.5 (c) 6 (d) 4.5

159. $\sqrt[3]{(333)^3+(333)^3+(334)^3-3\times 333\times 333\times 334}$ is equal to के बराबर है?
(a) 12 (b) 11 (c) 10 (d) 15

160. The sum of the squares of 2 number is 146 and the square root of one of them is $\sqrt{5}$. The cube of the other number is
दो संख्याओं के वर्गों का योग 146 है और उनमें से एक का वर्गमूल $\sqrt{5}$ है, तो दूसरी संख्या का घन क्या होगा?
(a) 1111 (b) 1221
(c) 1331 (d) 1441

161. The least number, by which 1944 must be multiplied so as to make the result a perfect cube is
वह कौन-सी न्यूनतम संख्या है जिससे 1944 से गुणा किया जाए कि परिणाम एक पूर्ण घन हो?
(a) 2 (b) 3 (c) 6 (d) 13

162. The smallest natural number, by which 3000 must be divided to make the quotient a perfect cube, is :
वह न्यूनतम प्राकृत संख्या कौन-सी है जिससे 3000 में भाग देने पर भागफल एक पूर्ण घन होगा?
(a) 3 (b) 4 (c) 5 (d) 6

163. The smallest positive integer n for which $864\times n$ is a perfect cube, is:
न्यूनतम धनात्मक पूर्णांक n क्या है जिसके लिए $864\times n$ एक पूर्ण घन है
(a) 1 (b) 2 (c) 3 (d) 4

YEAR : 2008

164. The value of $\frac{0.125+0.027}{0.25-0.15+0.09}$ का मान क्या है?
(a) 0.2 (b) 0.25 (c) 0.3 (d) 0.8

165. $\frac{(7.5)^3+1}{(7.5)^2-6.5}$ is equal to के बराबर है?

(a) 2.75 (b) $\frac{9}{5}$
(c) 4.75 (d) 8.5

166. The value of

$$\frac{(2.697-0.498)^2+(2.697+0.498)^2}{2.697\times 2.697+0.498\times 0.498}$$

का मान क्या है?
(a) 4 (b) 2
(c) 2.199 (d) 3.195

167. $\sqrt{\frac{0.081\times 0.484}{0.0064\times 6.25}}$ is equal to के बराबर है?
(a) 9 (b) .9 (c) 99 (d) .99

168. Given that $\sqrt{13}=3.6$ and $\sqrt{130}=11.4$, then the value of $\sqrt{13}+\sqrt{1300}+\sqrt{0.013}$ is equal to
दिया गया है, $\sqrt{13}=3.6$ और $\sqrt{130}=11.4$ है, तो $\sqrt{13}+\sqrt{1300}+\sqrt{0.013}$ का मान किसके बराबर है?
(a) 36.164 (b) 637.254
(c) 37.714 (d) 37.154

169. The largest number of five digits, which is a perfect square is
पाँच अंको की वह अधिकतम संख्या क्या है जो एक पूर्ण वर्ग है?
(a) 99999 (b) 99976
(c) 99856 (d) 99764

170. The number, whose square is equal to the difference of the squares of the numbers 68 and 32, is
वह संख्या क्या है जिसका वर्ग, 68 तथा 32 के वर्गों के अंतर के बराबर है?
(a) 36 (b) 48 (c) 60 (d) 64

YEAR : 2009

171. The least fraction to be subtracted from the expression $\frac{3\frac{1}{4}-\frac{4}{5}\text{ of }\frac{5}{6}}{4\frac{1}{3}\div\frac{1}{5}-\left(\frac{3}{10}+21\frac{1}{5}\right)}$ to make it an integer.

व्यंजक $\frac{3\frac{1}{4}-\frac{4}{5}\text{ of }\frac{5}{6}}{4\frac{1}{3}\div\frac{1}{5}-\left(\frac{3}{10}+21\frac{1}{5}\right)}$ में से वह कौन-सा भिन्न घटाया जाए कि परिणाम एक पूर्णांक हो?

(a) $\frac{1}{2}$ (b) $\frac{5}{6}$ (c) $\frac{1}{4}$ (d) $\frac{3}{10}$

172. If $\sqrt[2]{0.014\times0.14x} = 0.014 \times 0.14\sqrt[2]{y}$. find the value of $\frac{x}{y}$,
यदि $\sqrt[2]{0.014\times0.14x} = 0.014 \times 0.14\sqrt[2]{y}$ है, तो $\frac{x}{y}$ का मान ज्ञात करें।
(a) 0.000196 (b) 0.00196
(c) 0.0196 (d) 0.196

173. The simplified value of $\sqrt{5+\sqrt{11+\sqrt{19+\sqrt{29+\sqrt{49}}}}}$ is का सरलीकृत मान क्या है?
(a) 3 (b) 2 (c) 4 (d) 6

174. The smallest number that must be subtracted from 1000 to make the resulting number a perfect square is
1000 में से वह कौन-सी न्यूनतम संख्या घटायी जाए कि परिणाम एक पूर्ण वर्ग हो?
(a) 37 (b) 38 (c) 39 (d) 40

YEAR : 2010

175. $\frac{4.41\times0.16}{2.1\times1.6\times0.21}$ is simplified to सरल करें :
(a) 1 (b) 0.1 (c) 0.01 (d) 10

176. $(0.1 \times 0.01 \times 0.01 \times 10^7)$ is equal to के बराबर है?
(a) 100 (b) $\frac{1}{10}$ (c) $\frac{1}{100}$ (d) 10

177. $\frac{3.25\times3.20-3.20\times3.05}{0.064}$ is equal to: के बराबर है?
(a) 1 (b) $\frac{1}{2}$ (c) $\frac{1}{10}$ (d) 10

178. $\left\{\frac{(0.1)^2-(0.01)^2}{0.0001}\right\}+1$ is equal to के बराबर है?
(a) 1010 (b) 110
(c) 101 (d) 100

179. (0.5 × 5 + 0.25 × 0.5+ 0.5 × 4 + 0.5 × 0.75) is equal to के बराबर है?
(a) 5 (b) 10 (c) 15 (d) 20

180. $\frac{(5+5+5+5)\div5}{3+3+3+3+3\div3}$ is equal to के बराबर है?
(a) 1 (b) $\frac{3}{10}$ (c) $\frac{4}{9}$ (d) $\frac{2}{5}$

181. $\frac{(100-1)(100-2)(100-3)\ldots(100-100)}{100\times99\times98\times\ldots\times3\times2\times1}$ is equal to के बराबर है?
(a) $\frac{100}{99\times98\times97\times\ldots\times3\times2\times1}$
(b) $-\frac{1}{99\times98\times97\times\ldots\times3\times2\times1}$
(c) 0
(d) $\frac{2}{99\times98\times97\times\ldots\times3\times2\times1}$

182. (0.9 × 0.9 × 0.9 +0.1 × 0.1× 0.1) is equal to के बराबर है?
(a) 0.73 (b) 0.82 (c) 0.91 (d) 1.00

183. $\sqrt{\frac{0.009\times0.036\times0.016\times0.08}{0.002\times0.0008\times0.0002}}$ is equal to के बराबर है?
(a) 34 (b) 36 (c) 38 (d) 39

184. $\sqrt{1\frac{1}{4}\times\frac{64}{125}\times1.44}$ is equal to के बराबर है?
(a) $1\frac{1}{25}$ (b) $\frac{24}{25}$
(c) $\frac{23}{25}$ (d) $\frac{21}{25}$

185. $\left[2\sqrt{54}-6\sqrt{\frac{2}{3}}-\sqrt{96}\right]$ is equal to के बराबर है?
(a) 0 (b) 1 (c) 2 (d) $\sqrt{6}$

186. $\frac{\sqrt{24}+\sqrt{216}}{\sqrt{96}}$ is equal to के बराबर है?
(a) $\frac{2}{\sqrt{6}}$ (b) $2\sqrt{6}$
(c) $4\sqrt{6}$ (d) 2

187. $\sqrt{110+\frac{1}{4}}$ is equal to के बराबर है?
(a) 12.0 (b) 11.5
(c) 11.0 (d) 10.5

188. The smallest 4- digit number which is a perfect square is
चार अंकों की वह कौन-सी न्यूनतम संख्या है जो एक पूर्ण वर्ग है?
(a) 1009 (b) 1016
(c) 1024 (d) 1025

189. How many perfect squares lie between 120 and 300 ?
120 और 300 के बीच कितनी पूर्ण वर्ग संख्याएँ है?
(a) 5 (b) 6 (c) 7 (d) 8

190. If x is a perfect square integer such that $7< (2x-3) <17$, then the value of x is :
यदि x एक पूर्ण वर्ग पूर्णांक इस प्रकार है कि $7< (2x-3) <17$ है, तो x का मान ज्ञात करें।
(a) 25 (b) 16 (c) 9 (d) 81

191. The sum of a positive integer and its square is 2450. The positive integer is :
एक धनात्मक पूर्णांक और उसके वर्ग का योग 2450 है, तो धनात्मक पूर्णांक क्या है?
(a) 45 (b) 48 (c) 49 (d) 50

192. $\sqrt[3]{0.000064}$ is equal to के बराबर है?
(a) 0.0002 (b) 0.002
(c) 0.02 (d) 0.2

193. $\sqrt[3]{15612+\sqrt{154+\sqrt{225}}}$ is equal to के बराबर है?
(a) 15 (b) 25 (c) 75 (d) 125

194. $\sqrt[3]{0.000125}$ is equal to के बराबर है?
(a) 0.5 (b) 0.15
(c) 0.05 (d) 0.005

195. $\left(\sqrt[3]{1000}+\sqrt[3]{0.008}-\sqrt[3]{0.125}\right)$ is equal to के बराबर है?
(a) 9.7 (b) 9.97
(c) 9.997 (d) 9.9997

196. By what least number should 675 be multiplied so as to obtain a pefect cube number?
675 को किस न्यूनतम संख्या से गुणा किया जाए कि परिणाम एक पूर्ण घन हो?
(a) 3 (b) 5 (c) 24 (d) 40

197. The least number, that must be added to 1720 so as to obtain a perfect cube, is
1720 में कौन-सी न्यूनतम संख्या जोड़ी जाए कि परिणाम पूर्ण घन हो?
(a) 7 (b) 8 (c) 11 (d) 13

198. By what least number should 4320 be multiplied so as to obtain a number which is a perfect cube ?
4320 में किस न्यूनतम संख्या से गुणा किया जाए कि प्राप्त परिणाम एक पूर्ण घन हो?
(a) 40 (b) 50 (c) 60 (d) 80

YEAR : 2011

199. The value of $1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\frac{2}{3}}}}}$ का मान क्या है?
(a) $\frac{21}{13}$ (b) $\frac{17}{3}$ (c) $\frac{34}{21}$ (d) $\frac{8}{5}$

200. The value of $\cfrac{2\frac{1}{3}-1\frac{2}{11}}{3+\cfrac{1}{3+\cfrac{1}{3+\frac{1}{3}}}}$ का मान क्या है?
(a) $\frac{38}{109}$ (b) $\frac{109}{38}$ (c) 1 (d) $\frac{116}{109}$

201. The value of $3+\cfrac{3}{3+\cfrac{1}{3+\frac{1}{3}}}$ का मान क्या है?
(a) $\frac{40}{11}$ (b) $\frac{43}{11}$ (c) $\frac{46}{11}$ (d) $\frac{13}{11}$

202. $1+\cfrac{1}{1+\frac{1}{5}}=?$
(a) $\frac{11}{6}$ (b) $\frac{13}{6}$
(c) $\frac{16}{6}$
(d) none of the above (इनमें से कोई नहीं)

203. The value of $\frac{(3.2)^3-0.008}{(3.2)^2+0.64+0.04}$ का मान क्या है?
(a) 0 (b) 2.994
(c) 3.208 (d) 3

204. Simplify: सरल करें :
$$\frac{\frac{1}{3}+\frac{1}{4}\left[\frac{2}{5}-\frac{1}{2}\right]}{1\frac{2}{3}\text{ of }\frac{3}{4}-\frac{3}{4}\text{ of }\frac{4}{5}}$$
(a) $\frac{37}{78}$ (b) $\frac{37}{13}$
(c) $\frac{74}{78}$ (d) $\frac{74}{13}$

205. $\cfrac{\frac{0.04}{0.03}\text{ of }\left(3\frac{1}{3}-2\frac{1}{2}\right)\div\frac{1}{2}\text{ of }1\frac{1}{4}}{\frac{1}{3}+\frac{1}{5}\text{ of }\frac{1}{9}}$
(a) 1 (b) 5
(c) $\frac{1}{5}$ (d) $\frac{1}{2}$

206. The sum of the squares of 3 consecutive positive numbers is 365. The sum of the numbers is
तीन लगातार धनात्मक संख्याओं के वर्गों का योग 365 है, तो संख्याओं का योग ज्ञात करें।
(a) 30 (b) 33 (c) 36 (d) 45

207. $\sqrt{8+\sqrt{57+\sqrt{88+\sqrt{108+\sqrt{169}}}}}=?$
(a) 4 (b) 6 (c) 8 (d) 10

208. If the number p is 5 more than q and the sum of the squares of p and q is 55, then the product of p and q is
यदि P, Q से 5 अधिक है और P तथा Q के वर्गों का योग 55 हो, तो P तथा Q का गुणनफल ज्ञात करें।
(a) 10 (b) – 10 (c) 15 (d) – 15

209. The product of two numbers is 45 and their difference is 4 . The sum of squares of the two numbers is
दो संख्याओं का गुणनफल 45 है तथा उनका अंतर 4 है, तो उनके वर्गों का योग ज्ञात करें।
(a) 135 (b) 240 (c) 73 (d) 106

210. $\sqrt[3]{1-\frac{127}{343}}$ is equal to के बराबर है?
(a) $\frac{5}{9}$ (b) $1-\frac{1}{7}$
(c) $\frac{4}{7}$ (d) $1-\frac{2}{7}$

YEAR 2012

211. $\frac{0.3555\times0.5555\times2.025}{0.225\times1.7775\times0.2222}$ is equal to:
के बराबर है?
(a) 5.4 (b) 4.58 (c) 4.5 (d) 5.45
(SSC CHSL DEO & LDC Exam 4.11.2012)

212. $100\times10-100+2000\div100=?$
(a) 29 (b) 920
(c) 280 (d) 1000
(SSC CGL Tier I Exam 11.11.2012)

213. If $\frac{547.527}{0.0082}=x$, then the value of $\frac{547527}{82}$ is
यदि $\frac{547.527}{0.0082}=x$ है, तो $\frac{547527}{82}$ का मान क्या होगा?
(a) $10x$ (b) $100x$
(c) $\frac{x}{100}$ (d) $\frac{x}{10}$
(SSC CHSL DEO & LDC Exam 4.11.2012)

214. The square root of $\sqrt{\frac{0.324\times0.081\times4.624}{1.5625\times0.0289\times72.9\times64}}$ का वर्गमूल क्या है?
(a) 24 (b) 2.4
(c) 0.024 (d) 1.2
(SSC Constable (GD)& Rifleman (GD) Exam 22.04.2012)

215. The simplified value of $\sqrt{0.25\times225}$ is का सरलीकृत मान क्या है?
(a) 0.075 (b) 0.705
(c) 0.750 (d) 7.500
(SSC CHSL DEO & LDC Exam 4.11.2012)

216. If $\sqrt{18225}=135$, then the value of $\sqrt{18225}+\sqrt{182.25}+\sqrt{1.8225}+\sqrt{0.018225}$ is
यदि $\sqrt{18225}=135$ है, तो $\sqrt{18225}+\sqrt{182.25}+\sqrt{1.8225}+\sqrt{0.018225}$ का मान क्या है?
(a) 14.9985 (b) 149.985
(c) 1499.85 (d) 1.49985
(SSC CHSL DEO & LDC Exam 21.10.2012)

217. The square root of $21\frac{51}{169}$ is का वर्गमूल क्या है?
(a) $5\frac{8}{13}$ (b) $4\frac{8}{13}$
(c) $4\frac{3}{13}$ (d) $5\frac{5}{13}$
(SSC CHSL DEO & LDC Exam 28.10.2012)

218. If $(1101)^2 = 1212201$. find the value of $\sqrt{121.2201}$
यदि $(1101)^2 = 1212201$ है, तो $\sqrt{121.2201}$ का मान ज्ञात करें।

(a) 110.1 (b) 11.01
(c) 1.101 (d) 11.001
(SSC CGL Tier I Exam 11.11.2012)

219. The value of

$\sqrt{\frac{0.064 \times 0.256 \times 15.625}{0.025 \times 0.625 \times 4.096}}$ का मान क्या है?

(a) 2 (b) 2.4 (c) 0.24 (d) 4.2
(SSC DP (SI) Exam 19.08.2012)

220. The number of pairs of natural numbers the difference of whose squares is 45 will be
इस तरह के प्राकृत संख्याओं के जोड़ो की संख्या कितनी है जिनके वर्गो का अंतर 45 है?
(a) 2 (b) 3 (c) 6 (d) 5
(SSC CHSL DEO & LDC Exam 04.11.2012)

221. If $\sqrt[3]{3^n} = 27$, then the value of n is :
यदि $\sqrt[3]{3^n} = 27$ है, तो n का मान क्या है?
(a) 9 (b) 6 (c) 1 (d) 3
(SSC CHSL DEO & LDC Exam 4.11.2012)

Year : 2013

222. $\frac{4\frac{2}{7}-\frac{1}{2}}{3\frac{1}{2}+1\frac{1}{7}} \div \frac{1}{2+\frac{1}{2+\frac{1}{5-\frac{1}{5}}}}$ is equal to के बराबर है?

(a) 1 (b) $\frac{1}{2}$ (c)2 (d) $\frac{1}{3}$
(SSC CHSL DEO & LDC Exam 27.10.2013)

223. If $\left[4-\frac{5}{1+\frac{1}{3+\frac{1}{2+\frac{1}{4}}}}\right]^{th}$ part of a journey takes ten minutes, then to complete $\frac{3}{5}^{th}$ of that journey, it will take

यदि एक यात्रा का $\left[4-\frac{5}{1+\frac{1}{3+\frac{1}{2+\frac{1}{4}}}}\right]^{th}$ भाग तय करनें में दस मिनट लगता है, तो उसी यात्रा का $\frac{3}{5}$ भाग तय करनें में कितना समय लगेगा?
(a) 40 minutes (b) 45 minutes
(c) 48 minutes (d) 36 minutes
(SSC CHSL DEO & LDC Exam 10.11.2013)

224. $\sqrt{\frac{4\frac{1}{7}-2\frac{1}{4}}{3\frac{1}{2}+1\frac{1}{7}} + \frac{1}{2+\frac{1}{2+\frac{1}{5-\frac{1}{5}}}}}$ is equal to

के बराबर है?
(a) 1 (b) 4 (c) 3 (d) 2
(SSC CHSL DEO & LDC Exam 10.11.2013)

225. The value of $1+\frac{1}{1+\frac{2}{3+\frac{4}{5}}}$ का मान क्या है?

(a) $\frac{12}{29}$ (b) $\frac{8}{19}$ (c) $\frac{48}{29}$ (d) $\frac{2}{19}$
(SSC CAPF SI, ASI. Exam 23.06.2013)

226. $\frac{1}{1+2^{a-b}} + \frac{1}{1+2^{b-a}}$ is equal to

$\frac{1}{1+2^{a-b}} + \frac{1}{1+2^{b-a}}$ का मान है?
(a) a – b (b) b – a
(c) 1 (d) 0
(SSC CGL Tier I Exam 21.04.2013)

227. The value of

$3\frac{1}{2}-\left[2\frac{1}{4}+\left\{1-\frac{1}{4}\left(1-\frac{1}{2}-\frac{1}{3}-\frac{1}{6}\right)\right\}\right]$

का मान क्या है?
(a) $\frac{1}{2}$ (b) $2\frac{1}{2}$ (c) $3\frac{1}{2}$ (d) $9\frac{1}{2}$
(SSC CHSL DEO & LDC Exam 27.10.2013)

228. $\frac{3}{5} \times 3\frac{3}{5} + 2 \times 3\frac{3}{5} \times \frac{2}{5} + \frac{2}{5} \times \frac{2}{5} = ?$
(a) 15 (b) 16
(c) 17 (d) 18
(SSC Constable (GD) Exam 12.05.2013)

229. Find the sum of
$\left(1-\frac{1}{n+1}\right)+\left(1-\frac{2}{n+1}\right)+\left(1-\frac{3}{n+1}\right)+.....+\left(1-\frac{n}{n+1}\right)$
का योग ज्ञात करें।
(a) n (b) $\frac{1}{2}n$
(c) $(n+1)$ (d) $\frac{1}{2}(n+1)$
(SSC CGL Tier II Exam 29.09.2013)

230. The value of
$5\frac{1}{3}+1\frac{2}{9}\times\frac{1}{4}\left(10+\frac{3}{1-\frac{1}{5}}\right)$ का मान ज्ञात करें।
(a) 15 (b) $\frac{67}{25}$
(c) $\frac{128}{11}$ (d) $\frac{128}{99}$
(SSC CGL Tier I Re- Exam(2013) 20.07.2014)

231. The value of
$\left((3+\sqrt{8})\right)+\frac{1}{3-\sqrt{8}}-\left((6+4\sqrt{2})\right)$ का मान ज्ञात करें।
(a) 8 (b) 1
(c) $\sqrt{2}$ (d) 0
(SSC JCT Assistant Grade III Exam 07.04.2013)

232. What is the value of $\frac{\sqrt{24}+\sqrt{216}}{\sqrt{96}}$ =?
का मान क्या है?
(a) $2\sqrt{6}$ (b) $4\sqrt{6}$
(c) 2 (d) 4
(SSC MTS Exam 10.03.2013)

233. Simplify : सरल करें :
$\sqrt{3+\frac{33}{64}} \div \sqrt{9+\frac{1}{7}} \times 2\sqrt{3\frac{1}{9}}$
(a) $\frac{45}{256}$ (b) $1\frac{17}{28}$
(c) $4\frac{3}{8}$ (d) $2\frac{3}{16}$
(SSC MTS Exam 17.03.2013)

234. The simplified value of $\frac{\sqrt{32}+\sqrt{48}}{\sqrt{8}+\sqrt{12}}$ is

$\frac{\sqrt{32}+\sqrt{48}}{\sqrt{8}+\sqrt{12}}$ का सरलीकृत मान क्या है?
(a) 3 (b) 2
(c) 6 (d) 4
(SSC MTS Exam 17.03.2013)

235. Number of digits in the square root of 62478078 is :
62478078 के वर्ग मूल में कितने अंक है?
(a) 4 (b) 5
(c) 6 (d) 3
(SSC CGL Tier I Exam 21.04.2013)

236. If $\left(n^r - tn + \frac{1}{4}\right)$ be a perfect square, then the values of t are :
यदि $\left(n^r - tn + \frac{1}{4}\right)$ एक पूर्ण वर्ग है, तो t का मान ज्ञात करें।

(a) ± 2 (b) 1, 2 (c) 2,3 (d) ± 1

(SSC CGL Tier I Exam 21.04.2013)

237. The square root of $33 - 4\sqrt{35}$ is :

$33 - 4\sqrt{35}$ का वर्गमूल क्या है?

(a) $\pm\left(2\sqrt{7} + \sqrt{5}\right)$ (b) $\pm\left(\sqrt{7} + 2\sqrt{5}\right)$

(c) $\pm\left(\sqrt{7} - 2\sqrt{5}\right)$ (d) $\pm\left(2\sqrt{7} - \sqrt{5}\right)$

(SSC CGL Tier I Exam 21.04.2013)

238. Find the value of $\sqrt{156.25} + \sqrt{0.0081} - \sqrt{0.0361}$ का मान क्या है?

(a) 13.4 (b) 15.4 (c) 12.4 (d) 17.4

(SSC Constable (GD) Exam 12.05.2013)

239. The fourth root of 24010000 is

24010000 का चतुर्थ मूल क्या है?

(a) 7 (b) 49 (c) 490 (d) 70

(SSC CGL Tier I Exam 19.05.2013)

240. The greatest 4 digit number which is a perfect square, is

चार अंको की वह अधिकतम संख्या क्या है जो एक पूर्ण वर्ग है?

(a) 9999 (b) 9909

(c) 9801 (d) 9081

(SSC CGL Tier I Exam 19.10.2013)

241. What number must be added to the expression $16a^2 - 12a$ to make it a perfect square ?

$16a^2 - 12a$ में कौन-सी संख्या जोड़ी जाए कि परिणाम एक पूर्ण वर्ग हो?

(a) $\frac{9}{4}$ (b) $\frac{11}{2}$ (c) $\frac{13}{2}$ (d) 16

(SSC CGL Tier I Exam 19.05.2013)

242. The value of $\left(\sqrt{4^3 + 15^2}\right)^3$ का मान क्या है?

(a) 4913 (b) 4313

(c) 4193 (d) 3943

(SSC MTS Exam 10.03.2013)

243. $\sqrt[3]{4\frac{12}{125}}$ is equal to के बराबर है?

(a) 1.4 (b) 1.6 (c) 1.8 (d) 2.4

(SSC MTS Exam 17.03.2013)

YEAR : 2014

244. If $x - [-2\{-4(-a)\}+5] = -2\{2 - (-a)\}] = 4a$, then x = ?

यदि $x - [-2\{-4(-a)\}+5] = -2\{2 - (-a)\}] = 4a$ है, तो x = ?

(a) -2 (b) -3 (c) -4 (d) -5

(SSC CGL Tier I Exam 19.10.2014)

245. The least number which must be added to 1728 to make it a perfect square is .....

1728 में वह कौन-सी न्यूनतम संख्या जोड़ी जाए कि परिणाम पूर्ण वर्ग हो?

(a) 36 (b) 32 (c) 38 (d) 30

(SSC CHSL DEO & LDC Exam 16.04.2014)

246. If a = 64 and b =289, then the value of $\left(\sqrt{\sqrt{a} + \sqrt{b}} - \sqrt{\sqrt{b} - \sqrt{a}}\right)^{\frac{1}{2}}$ is

यदि a = 64 और b =289 है, तो

$\left(\sqrt{\sqrt{a} + \sqrt{b}} - \sqrt{\sqrt{b} - \sqrt{a}}\right)^{\frac{1}{2}}$ का मान ज्ञात करें।

(a) $2^{1/2}$ (b) 2 (c) 4 (d) -2

(SSC CHSL DEO & LDC Exam 16.04.2014)

247. $\sqrt{64009}$ is equal to के बराबर है?

(a) 352 (b) 523 (c) 253 (d) 532

(SSC CHSL DEO & LDC Exam 16.04.2014)

248. A tourist spends daily as many rupees as the number of days of his total tour. If his total expenses were ₹ 361, then how many days did his tour last ?

एक पर्यटक प्रतिदिन उतने ही रुपये खर्च करता है जितने उसके पर्यटन के दिनों की संख्या है। उसका कुल खर्च ₹ 361 है, तो ज्ञात करें कि उसका पर्यटन कितने दिनों तक चला ?

(a) 17 days (b) 19 days

(c) 21 days (d) 31 days

(SSC CGL Tier II Exam 21.09.2014)

249. The value of $\sqrt{10^{-6} \times 0.25}$ is का मान क्या है?

(a) 0.0025 (b) 0.0005

(c) 0.25 (d) 0.50

(SSC CAPF SI, CISF, DELHI POLICE Exam 22.06.2014)

250. The simplified value of

$$\frac{3\sqrt{2}}{\sqrt{3}+\sqrt{6}} - \frac{4\sqrt{3}}{\sqrt{6}+\sqrt{2}} + \frac{\sqrt{6}}{\sqrt{3}+\sqrt{2}}$$

का सरलीकृत मान क्या है?

(a) $\sqrt{2}$ (b) $\frac{1}{\sqrt{2}}$

(c) $\sqrt{3} - \sqrt{2}$ (d) 0

(SSC CHSL DEO & LDC Exam 02.11.2014)

251. The value of $\frac{4 - \sqrt{0.04}}{4 + \sqrt{0.4}}$ is close to

का मान किसके निकटतम है?

(a) 0.4 (b) 0.8 (c) 1.0 (d) 1.4

(SSC CHSL DEO & LDC Exam 02.11.2014)

252. If $\sqrt{0.05 \times 0.5 \times a} = 0.5 \times 0.05 \times \sqrt{b}$, then $\frac{a}{b}$ is equal to

यदि $\sqrt{0.05 \times 0.5 \times a} = 0.5 \times 0.05 \times \sqrt{b}$ है, तो $\frac{a}{b}$ किसके बराबर है?

(a) 0.0025 (b) 0.025

(c) 0.25 (d) 0.00025

(SSC CHSL DEO & LDC Exam 02.11.2014)

253. A teacher wants to arrange his students in an equal number of rows and columns. If there are 1369 students, the number of students in the last row are

एक शिक्षक अपने छात्रों को बराबर पंक्तियों तथा स्तभों में बाँटना चाहता है। यदि छात्रों की कुल संख्या1369 तो ज्ञात करें कि अंतिम पंक्ति में कितने छात्र है?

(a) 37 (b) 33 (c) 63 (d) 47

(SSC CHSL DEO & LDC Exam 09.11.2014)

254. Which of the following is true ?

निम्न में से कौन-सा कथन सत्य है?

(a) $\sqrt{5} + \sqrt{3} > \sqrt{6} + \sqrt{2}$

(b) $\sqrt{5} + \sqrt{3} < \sqrt{6} + \sqrt{2}$

(c) $\sqrt{5} + \sqrt{3} = \sqrt{6} + \sqrt{2}$

(d) $\left(\sqrt{5} + \sqrt{3}\right) = \left(\sqrt{6} + \sqrt{2}\right) = 1$

(SSC CHSL DEO & LDC Exam 09.11.2014)

255. The least number by which 20184 must be multiplied so as to make the product a perfect square is

वह न्यूनतम संख्या ज्ञात करें जिससे 20184 को गुणा करने पर प्राप्त परिणाम एक पूर्ण वर्ग हो?

(a) 2 (b) 3 (c) 5 (d) 6

(SSC CHSL DEO & LDCExam16.11.2014)

256. If $x = \sqrt{3} + \sqrt{2}$ then the value of $x^3 - \frac{1}{x^3}$ is

यदि $x = \sqrt{3} + \sqrt{2}$ है, तो $x^3 - \frac{1}{x^3}$ का मान ज्ञात करें।

(a) $10\sqrt{2}$ (b) $14\sqrt{2}$

(c) $22\sqrt{2}$ (d) $8\sqrt{2}$

(SSC CGL Tier I Re- Exam 27.04.2014)

257. The value of $(1001)^3$ is का मान क्या है?

(a) 1003003001 (b) 100303001

(c) 100300301 (d) 103003001

(SSC CGL Tier I Exam 26.10.2014)

258. What is the smallest number by which 625 must be divided so that the quotient is a perfect cube ?

वह न्यूनतम संख्या क्या है जिससे 625 में भाग देने पर प्राप्त भागफल एक पूर्ण घन है?

(a) 25 (b) 5 (c) 2 (d) 3

(SSC CGL Tier II Exam 21.09.2014)

259. The value of

$\left(\sqrt{6} + \sqrt{10} - \sqrt{21} - \sqrt{35}\right)$

(a) 27 (b) 18

(c) 40 (d) 10

(SSC CPO Exam 20.3.2016, Morning)

260. $\dfrac{1}{a+\dfrac{1}{b+\dfrac{1}{c+\dfrac{1}{2}}}} = \dfrac{16}{23}$, then the value of a + b + c is

(a) 3 (b) 6

(c) 9 (d) 12

(SSC CPO Exam 20.3.2016, Morning)

261. The sum of two numbers is $15\frac{1}{3}$ and their difference is $4\frac{2}{3}$. The product of the numbers is

दो संख्याओं का योग $15\frac{1}{3}$ है और उनका अंतर $4\frac{2}{3}$ है। संख्याओं का गुणनफल क्या होगा?

(a) $48\frac{2}{3}$ (b) 60

(c) 50 (d) $53\frac{1}{3}$

(SSC CPO Exam 20.3.2016, Morning)

262. The value of

$$\frac{(0.013)^3+0.000000343}{(0.013)^2-0.000091\div 0.000049}$$

is

(a) 0.03 (b) 0.01

(c) 0.04 (d) 0.02

263. Let a be a positive integer. When 89 and 125 are divided by a, the remainders are 4 and 6 respectively. Then the value of a is

माना a एक धनात्मक पूर्णांक है। जब 89 और 125 को a से विभाजित किया जाता है, तो शेषफल क्रमशः 4 और 6 रहता है। a का मान ज्ञात होगा?

(a) 15 (b) 17

(c) 9 (d) 7

(SSC CPO Exam 20.3.2016, Morning)

264. The value of following is:

$$\sqrt{12+\sqrt{12+\sqrt{12+.....}}}$$

(a) $2\sqrt{2}$ (b) $2\sqrt{3}$

(c) 4 (d) 2

(SSC CPO Exam 20.3.2016, Evening)

265. If $x = \sqrt[3]{7}+3$ then the value of $x^3 - 9x^2 + 27x - 34$ is:

(a) 2 (b) 1

(c) – 1 (d) 0.

(SSC CPO Exam 20.3.2016, Evening)

266. The value of x in the below equation is:

दिए गए समीकरण में x का मान क्या होगा?

$0.\bar{3}+0.\bar{6}+0.\bar{7}+0.\bar{8}=x$

(a) 5.3 (b) $2.\overline{35}$

(c) $2\frac{2}{3}$ (d) $2\frac{3}{10}$

(SSC CPO Exam 20.3.2016, Evening)

267. Simplified value of the following expression is:

$$\frac{1}{\sqrt{11-2\sqrt{30}}} - \frac{3}{\sqrt{7+2\sqrt{10}}} - \frac{4}{\sqrt{8+4\sqrt{3}}}$$

(a) 0 (b) 1

(c) $\sqrt{2}$ (d) $\sqrt{3}$

(SSC CPO Exam 20.3.2016, Evening)

268. Given $2^2 + 4^2 + 6^2 + ... + 40^2 = 11480$, then the value of $1^2 + 2^2 + 3^2 + ... + 20^2$ is :

(a) 2868 (b) 2870

(c) 2869 (d) 2867

(SSC CPO Exam 20.3.2016, Evening)

269. The value of following is:

$$\frac{0.2\times 0.02\times 0.002\times 32}{0.4\times 0.04\times 0.004\times 16}$$

(a) 0.40 (b) 0.50

(c) 0.20 (d) 0.25

(SSC CPO Exam 20.3.2016, Evening)

270. The sum of 3 consecutive natural numbers divisible by 3 is 45. The smallest number is:

3 द्वारा विभाज्य 3 अनुक्रमिक प्राकृत संख्याओं का योग 45 है। लघुतम संख्या क्या होगी?

(a) 12 (b) 3

(c) 18 (d) 9

(SSC CPO Exam 20.3.2016, Evening)

271. If $1^2 + 2^2 + 3^2 + ... + p^2 = \dfrac{p(p+1)(2p+1)}{6}$, then $1^2 + 3^2 + 5^2 + ...+17^2$ is

(a) 969 (b) 1785

(c) 980 (d) 1700

(SSC CPO Exam 20.3.2016, Evening)

272. The simplest value of

$$\left(\frac{1}{\sqrt{9}-\sqrt{8}}-\frac{1}{\sqrt{8}-\sqrt{7}}+\frac{1}{\sqrt{7}-\sqrt{6}}-\frac{1}{\sqrt{6}-\sqrt{5}}\right)$$

$$\left(\frac{1}{\sqrt{9}-\sqrt{8}}-\frac{1}{\sqrt{8}-\sqrt{7}}+\frac{1}{\sqrt{7}-\sqrt{6}}-\frac{1}{\sqrt{6}-\sqrt{5}}\right)$$

का सरलीकृत मान क्या है

(a) $3-\sqrt{5}$ (b) 3

(c) $\sqrt{5}$ (d) $\sqrt{5}-3$

(SSC CPO(Re) 04-06-2016, Morning)

273. Find value of $[2 \times 3^{n+4} - 9 \times 3^n] / 3^{n+2}$.

$[2 \times 3^{n+4} - 9 \times 3^n] / 3^{n+2}$ का मान ज्ञात करें?

(a) 18 (b) 3

(c) 1 (d) 17

(SSC CPO(Re) 05-06-2016, Morning)

274. What will be the remainder when $252^{126} + 244^{152}$ is divided by 10?

जब $252^{126} + 244^{152}$ को 10 से भाग किया जाएगा, तो शेषफल क्या होगा?

(a) 8 (b) 6

(c) 0 (d) 8

(SSC CPO(Re) 07-06-2016, Evening)

ANSWER KEY

1. (a)	28. (b)	55. (c)	82. (a)	109. (d)	136. (a)	163. (b)	190. (c)	217. (b)	244. (b)
2. (a)	29. (a)	56. (b)	83. (b)	110. (c)	137. (b)	164. (d)	191. (c)	218. (b)	245. (a)
3. (c)	30. (d)	57. (c)	84. (c)	111. (b)	138. (a)	165. (d)	192. (d)	219. (a)	246. (a)
4. (a)	31. (d)	58. (a)	85. (c)	112. (d)	139. (d)	166. (b)	193. (b)	220. (b)	247. (c)
5. (c)	32. (b)	59. (c)	86. (b)	113. (b)	140. (c)	167. (d)	194. (c)	221. (a)	248. (b)
6. (c)	33. (d)	60. (b)	87. (b)	114. (b)	141. (a)	168. (c)	195. (a)	222. (c)	249. (b)
7. (a)	34. (d)	61. (d)	88. (a)	115. (d)	142. (d)	169. (c)	196. (b)	223. (c)	250. (d)
8. (c)	35. (d)	62. (c)	89. (c)	116. (b)	143. (c)	170. (c)	197. (b)	224. (a)	251. (b)
9. (c)	36. (d)	63. (c)	90. (a)	117. (d)	144. (b)	171. (a)	198. (b)	225. (c)	252. (b)
10. (a)	37. (c)	64. (a)	91. (d)	118. (b)	145. (d)	172. (b)	199. (c)	226. (c)	253. (a)
11. (d)	38. (d)	65. (d)	92. (b)	119. (c)	146. (c)	173. (a)	200. (a)	227. (a)	254. (a)
12. (a)	39. (a)	66. (c)	93. (a)	120. (d)	147. (d)	174. (c)	201. (b)	228. (b)	255. (d)
13. (a)	40. (d)	67. (c)	94. (d)	121. (c)	148. (d)	175. (a)	202. (a)	229. (b)	256. (c)
14. (b)	41. (c)	68. (b)	95. (b)	122. (c)	149. (d)	176. (a)	203. (d)	230. (a)	257. (a)
15. (d)	42. (a)	69. (d)	96. (b)	123. (c)	150. (a)	177. (d)	204. (a)	231. (d)	258. (b)
16. (c)	43. (a)	70. (b)	97. (a)	124. (c)	151. (d)	178. (d)	205. (b)	232. (c)	259. (d)
17. (b)	44. (c)	71. (c)	98. (b)	125. (b)	152. (c)	179. (a)	206. (b)	233. (d)	260. (b)
18. (c)	45. (d)	72. (c)	99. (d)	126. (a)	153. (c)	180. (d)	207. (a)	234. (b)	261. (d)
19. (d)	46. (b)	73. (c)	100. (b)	127. (c)	154. (b)	181. (c)	208. (c)	235. (a)	262. (d)
20. (b)	47. (a)	74. (b)	101. (c)	128. (a)	155. (c)	182. (a)	209. (d)	236. (d)	263. (b)
21. (d)	48. (a)	75. (b)	102. (a)	129. (d)	156. (b)	183. (b)	210. (b)	237. (d)	264. (c)
22. (b)	49. (d)	76. (d)	103. (b)	130. (a)	157. (d)	184. (b)	211. (c)	238. (c)	265. (d)
23. (a)	50. (c)	77. (b)	104. (d)	131. (a)	158. (c)	185. (a)	212. (b)	239. (d)	266. (c)
24. (a)	51. (b)	78. (b)	105. (b)	132. (c)	159. (c)	186. (d)	213. (d)	240. (c)	267. (a)
25. (d)	52. (b)	79. (a)	106. (b)	133. (d)	160. (c)	187. (d)	214. (c)	241. (a)	268. (b)
26. (c)	53. (b)	80. (d)	107. (a)	134. (c)	161. (b)	188. (c)	215. (c)	242. (a)	269. (d)
27. (c)	54. (c)	81. (d)	108. (d)	135. (b)	162. (a)	189. (c)	216. (b)	243. (b)	270. (a)
									271. (a)
									272. (a)
									273. (d)
									274. (d)

SOLUTION

1. (a) According to the question,

$$1+\cfrac{1}{1+\cfrac{2}{2+\cfrac{3}{1+\cfrac{4}{5}}}}$$

$$\Rightarrow 1+\cfrac{1}{1+\cfrac{2}{2+\cfrac{3}{\cfrac{5+4}{5}}}}$$

$$\Rightarrow 1+\cfrac{1}{1+\cfrac{2}{2+\cfrac{3\times 5}{9}}}$$

$$\Rightarrow 1+\cfrac{1}{1+\cfrac{2}{\cfrac{18+15}{9}}}$$

$$\Rightarrow 1+\cfrac{1}{1+\cfrac{18}{33}}$$

$$\Rightarrow 1+\cfrac{1}{\cfrac{33+18}{33}}$$

$$\Rightarrow 1+\frac{33}{51}$$

$$\Rightarrow \frac{51+33}{51}$$

$$\Rightarrow \frac{84}{51}$$

$$\Rightarrow 1\frac{11}{17}$$

2. (a)
According to the question,

$$1+\cfrac{2}{1+\cfrac{3}{1+\cfrac{4}{5}}}$$

$$\Rightarrow 1+\cfrac{2}{1+\cfrac{3\times 5}{5+4}}$$

$$\Rightarrow 1+\cfrac{2}{1+\cfrac{15}{9}}$$

$$\Rightarrow 1+\frac{18}{9+15}$$

$$\Rightarrow \frac{24+18}{24}$$

$$\Rightarrow \frac{42}{24}$$

$$\Rightarrow \frac{7}{4}$$

3. (c)
According to the question,

$$\frac{9\,|3-5|-5|4|\div 10}{-3(5)-2\times 4\div 2}$$

$$\Rightarrow \frac{9\times 2-20\div 10}{-15-8\div 2}$$

$$\Rightarrow \frac{18-2}{-15-4}$$

$$\Rightarrow \frac{-16}{19}$$

4. (a) According to the question,

$$5-\left[4-\left(3-\{3-3-6\}\right)\right]$$

$$\Rightarrow 5-\left[4-\left(3-\{-6\}\right)\right]$$

$$\Rightarrow 5-\left[4-\left(3+6\right)\right]$$

$$\Rightarrow 5-\left[4-9\right]$$

$$\Rightarrow 5-\left[-5\right]$$

$$\Rightarrow 5+5=10$$

5. (c)
According to the question,

$$\frac{-(4-6)^2-3(-2)+|-6|}{18-9\div 3\times 5}$$

$$\Rightarrow \frac{-(-2)^2+6+6}{18-3\times 5}$$

$$\Rightarrow \frac{-4+6+6}{18-15}$$

$$\Rightarrow \frac{8}{3}$$

6. (c)
According to the question,

$$\frac{\frac{5}{3}\times\frac{7}{51}\text{ of }\frac{17}{5}-\frac{1}{3}}{\frac{2}{9}\times\frac{5}{7}\text{ of }\frac{28}{5}-\frac{2}{3}}$$

$$\Rightarrow \frac{\frac{5}{3}\times\frac{7}{51}\times\frac{17}{5}-\frac{1}{3}}{\frac{2}{9}\times\frac{5}{7}\times\frac{28}{5}-\frac{2}{3}}$$

$$\Rightarrow \frac{\frac{5}{3}\times\frac{7}{15}-\frac{1}{3}}{\frac{2}{9}\times 4-\frac{2}{3}}$$

$$\Rightarrow \frac{\frac{7}{9}-\frac{1}{3}}{\frac{8}{9}-\frac{2}{3}}$$

$$\Rightarrow \frac{\frac{7-3}{9}}{\frac{8-6}{9}}$$

$$\Rightarrow \frac{4}{2}=2$$

7. (a)
According to the question,

$$1-\left[5-\left\{2+\left(-5+6-2\right)2\right\}\right]$$

$$\Rightarrow 1-\left[5-\left\{2+(-1)2\right\}\right]$$

$$\Rightarrow 1-\left[5-\left\{2-2\right\}\right]$$

$$\Rightarrow 1-\left[5-0\right]$$

$$\Rightarrow 1-5=-4$$

8. (c)
According to the question,

$$\sqrt{1.3}+\sqrt{1300}+\sqrt{0.013}$$

$$\Rightarrow \sqrt{\frac{130}{100}}+\sqrt{1300}+\sqrt{\frac{130}{10000}}$$

$$\Rightarrow \frac{11.4}{10}+36.05+\frac{11.4}{100}$$

$$\Rightarrow 1.14+36.05+0.114$$

$$\Rightarrow 37.304$$

9. (c) According to the question,

$$\frac{(2.644)^2-(2.356)^2}{0.288}$$

$$\Rightarrow \frac{(2.644+2.356)(2.644-2.356)}{0.288}$$

$$\left[\because a^2-b^2=(a+b)(a-b)\right]$$

$$\Rightarrow \frac{5\times 0.288}{0.288}=5$$

10.(a)
According to question,

$$\frac{(3.4567)^2-(3.4533)^2}{0.0034}$$

$$\left[\because a^2-b^2=(a+b)(a-b)\right]$$

$$\Rightarrow \frac{(3.4567+3.4533)(3.4567-3.4533)}{0.0034}$$

$$\Rightarrow \frac{6.91\times 0.0034}{0.0034}=6.91$$

11. (d)
According to the question,

$$\frac{(0.03)^2-(0.01)^2}{0.03-0.01}$$

$$\Rightarrow \frac{(0.03+0.01)(0.03-0.01)}{(0.03-0.01)}$$

$$\Rightarrow (0.03+0.01)$$

$$\left[\because a^2-b^2=(a+b)(a-b)\right]$$

$$\Rightarrow 0.04$$

12. (a)
According to the question,

Square root of $0.09=\sqrt{0.09}=0.3$

13. (a)
According to the question,

$$\Rightarrow \frac{(0.75)^3}{1-0.75}+\left[0.75+(0.75)^2+1\right]$$

$$\Rightarrow \frac{(0.75)^3}{1-0.75}+\frac{1^3-(0.75)^3}{1-0.75}$$

$$\left[\because a^3-b^3=(a-b)(a^2+b^2+ab)\right]$$

$$\Rightarrow \frac{(0.75)^3+1-(0.75)^3}{0.25}$$

$$\Rightarrow \frac{1}{0.25}$$

$$\Rightarrow 4$$

14. (b)
According to the question,

$$\sqrt{\frac{0.49}{0.25}}+\sqrt{\frac{0.81}{0.36}}$$

$$\Rightarrow \frac{7}{5}+\frac{9}{6}$$

$$\Rightarrow \frac{42+45}{30}$$

$$\Rightarrow \frac{87}{30}$$

$$\Rightarrow 2\frac{9}{10}$$

15. (d)
According to the question,

$$\sqrt{x}+\sqrt{441}=0.02$$

$$\Rightarrow \frac{\sqrt{x}}{\sqrt{441}}=0.02$$

$$\Rightarrow \frac{\sqrt{x}}{21}=\frac{2}{100}$$

$$\Rightarrow \sqrt{x}=\frac{42}{100}$$

Squaring both sides

$$\Rightarrow x=0.1764$$

16. (c)
According to the question,

$$\sqrt{4+\sqrt{4+\sqrt{10000}}}$$

$$\Rightarrow \sqrt{4+\sqrt{44+100}}$$

$$\Rightarrow \sqrt{4+\sqrt{144}}$$

$$\Rightarrow \sqrt{4+12}$$

$$\Rightarrow \sqrt{16}=4$$

17. (b)
According to the question,

Given: $\sqrt{841}=29$

$\therefore \sqrt{0.00000841}=0.0029$

18. (c)
According to the question,

$$\sqrt{100}=10$$

$\Rightarrow$ Since $99<100$ So, square root of 99 or any no. less than 100 will be less than 10.

So, the range lies between -10 to 10 in given series.

19. (d)
According to the question,

3	5808
2	1936
2	968
2	484
2	242
11	121
11	11
	1

Factors are:

$\boxed{3}, \overbrace{2, 2, 2, 2, 11, 11}$

Smallest number is = 3

20. (b)
According to the question,

$$\frac{3}{4}\div\sqrt{\frac{10}{9}}\times\sqrt[3]{125}$$

$$\Rightarrow \frac{2}{4}\times\frac{10}{7}\times 5$$

$$\Rightarrow \frac{2}{1}\times\frac{7}{10}\times 5$$

$$\Rightarrow \frac{7}{4}=1\frac{3}{4}$$

21. (d)
According to the question,

3	1323
3	441
3	147
7	49
7	7
	1

Factors are: $\overbrace{3, 3, 3, 7, 7}, \boxed{7}$

$\therefore$ Smallest number is = 7

22. (b)
According to the question,

$3034-(1002\div 20.04)$

$$\Rightarrow 3034-\frac{1002}{20.04}$$

$$\Rightarrow 3034-\frac{1002}{2004}\times 100$$

$$\Rightarrow 3034-\frac{1}{2}\times 100$$

$\Rightarrow 3034-50=2984$

23. (a) According to the question,

$$(100)^{\frac{1}{2}}\times(0.001)^{\frac{1}{3}}-(0.0016)^{\frac{1}{4}}\times 3^0+\left(\frac{5}{4}\right)^{-1}$$

$$\Rightarrow 10\times 0.1-0.2\times 1+\frac{4}{5}$$

$$\Rightarrow 10\times 0.1-0.2+\frac{4}{5}$$

$$\Rightarrow 1-\frac{2}{10}+\frac{4}{5}$$

$\Rightarrow \frac{5-1+4}{5}$

$\Rightarrow \frac{8}{5} = 1.6$

24. (a)
According to the question,

$\Rightarrow \frac{\frac{1}{2}-\frac{1}{4}+\frac{1}{5}-\frac{1}{6}}{\frac{2}{5}-\frac{5}{9}+\frac{3}{5}-\frac{7}{18}}$

$\Rightarrow \frac{\frac{30-15+12-10}{60}}{\frac{36-50+54-35}{90}}$

$\Rightarrow \frac{17}{60} \times \frac{90}{5} = 5\frac{1}{10}$

25. (d)
According to the question,

$\Rightarrow \frac{\sqrt{72}-\sqrt{18}}{\sqrt{12}}$

$\Rightarrow \sqrt{\frac{72}{12}}-\sqrt{\frac{18}{12}}$

$\Rightarrow \sqrt{6} - \sqrt{\frac{6}{4}}$

$\Rightarrow \sqrt{6} - \frac{\sqrt{6}}{2}$

$\Rightarrow \frac{\sqrt{6}}{2}$

26. (c)
According to the question,

$\Rightarrow \frac{\sqrt{80}-\sqrt{112}}{\sqrt{45}-\sqrt{63}}$

$\Rightarrow \frac{4\sqrt{5}-4\sqrt{7}}{3\sqrt{5}-3\sqrt{7}}$

Rationalize above equation,

$\Rightarrow \frac{4\sqrt{5}-4\sqrt{7}}{3\sqrt{5}-3\sqrt{7}} \times \frac{3\sqrt{5}+3\sqrt{7}}{3\sqrt{5}+3\sqrt{7}}$

$\Rightarrow \frac{60+12\sqrt{35}-12\sqrt{35}-84}{45-63}$

$\Rightarrow \frac{-24}{-18} \Rightarrow \frac{4}{3}$

$\Rightarrow 1\frac{1}{3}$

27. (c)
According to the question,

$\Rightarrow \sqrt{(272)^2-(128)^2}$

$\Rightarrow \sqrt{(272+128)(272-128)}$

$\left[\because a^2-b^2 = (a+b)(a-b)\right]$

$\Rightarrow \sqrt{400 \times 144}$

$\Rightarrow 20 \times 12 = 240$

28. (b) According to the question,

$\Rightarrow \sqrt{15,876} = 126$

Hence, Unit digit is 6

29. (a) According to the question,

$x + y = 22$ ....(i)

$x^2 + y^2 = 404$ .... (ii)

$\therefore (x+y)^2 = x^2 + y^2 + 2xy$

$(22)^2 = 404 + 2xy$

$484 = 404 + 2xy$

$2xy = 80$

$xy = 40$

30. (d) According to the question,

$\frac{1}{3}\sqrt{x} = 0.001$

$\sqrt{x} = 0.003$

Squaring both sides

$x = 0.000009$

$\therefore$ Number is = 0.000009

31.(d) According to the question,

$\Rightarrow \frac{1008}{7} = 144 = (12)^2$

$\therefore$ Number is = 7

32. (b) According to the question,

$\Rightarrow \sqrt[3]{\frac{72.9}{0.4096}}$

$\Rightarrow \sqrt[3]{\frac{729 \times 10000}{4096 \times 10}}$

$\Rightarrow \sqrt[3]{\frac{729}{4096} \times 1000}$

$\Rightarrow \frac{9}{16} \times 10$

$\Rightarrow 5.625$

33. (d)
According to the question,

$\Rightarrow (5.5)^3 - (4.5)^3$

$\left[\because a^3-b^3 = (a-b)\ (a^2+b^2+ab)\right]$

$\Rightarrow (5.5-4.5)\ [(5.5)^2 + (4.5)^2 + 5.5 \times 4.5]$

$\Rightarrow 1(30.25 + 20.25 + 24.75) = 75.25$

34. (d)
Only 64 is a perfect square as well as a cube : $8^2 = 64$

$4^3 = 64$

35. (d)
According to the question,

$\Rightarrow x^3 - x^2 = 48$ .....(i)

Now check from option to save your valuable time.

Option:(d) Number = 4

$\Rightarrow (4)^3 - (4)^2$

$\Rightarrow 64 - 16$

$\Rightarrow 48$ (satisfied)

36. (d) According to the question,

$\Rightarrow \frac{1}{3+\frac{1}{2-\frac{1}{\frac{7}{9}}}} + \frac{17}{22}$

$\Rightarrow \frac{1}{3+\frac{1}{2-\frac{9}{7}}} + \frac{17}{22}$

$\Rightarrow \frac{1}{3+\frac{7}{5}} + \frac{17}{22}$

$\Rightarrow \frac{5}{15+7} + \frac{17}{22}$

$\Rightarrow \frac{5}{22} + \frac{17}{22}$

$\Rightarrow \frac{22}{22} = 1$

37. (c) According to the question,

If $x = 1 + \cfrac{1}{1+\cfrac{1}{1+\cfrac{1}{1+\frac{1}{2}}}}$

$\Rightarrow x = 1 + \cfrac{1}{1+\cfrac{1}{1+\frac{2}{3}}}$

$\Rightarrow x = 1 + \cfrac{1}{1+\frac{3}{5}}$

$\Rightarrow x = 1 + \frac{5}{8}$

$\Rightarrow x = \frac{13}{8}$

$\therefore$ Value of $2x + \frac{7}{4}$ is

$\Rightarrow 2 \times \frac{13}{8} + \frac{7}{4}$

$\Rightarrow \frac{13}{4} + \frac{7}{4}$

$\Rightarrow \frac{20}{4} = 5$

38. (d)
According to the question,

$$\Rightarrow \frac{19}{43} + \frac{1}{2 + \frac{1}{3 + \frac{1}{1 + \frac{1}{4}}}}$$

$$\Rightarrow \frac{19}{43} + \frac{1}{2 + \frac{1}{3 + \frac{4}{5}}}$$

$$\Rightarrow \frac{19}{43} + \frac{1}{2 + \frac{5}{19}}$$

$\Rightarrow \frac{19}{43} + \frac{19}{43}$

$\Rightarrow \frac{38}{43}$

39. (a) According to the question,

$\Rightarrow 8\frac{1}{2} - \left[3\frac{1}{4} + \left\{1\frac{1}{4} - \frac{1}{2}\left(1\frac{1}{2} - \frac{1}{3} - \frac{1}{6}\right)\right\}\right]$

$\Rightarrow \frac{17}{2} - \left[\frac{13}{4} + \left\{\frac{5}{4} - \frac{1}{2}\left(\frac{3}{2} - \frac{1}{3} - \frac{1}{6}\right)\right\}\right]$

$\Rightarrow \frac{17}{2} - \left[\frac{13}{4} + \left\{\frac{5}{4} - \frac{1}{2}\left(\frac{9-2-1}{6}\right)\right\}\right]$

$\Rightarrow \frac{17}{2} - \left[\frac{13}{4} + \left\{\frac{5}{4} - \frac{1}{2} \times 1\right\}\right]$

$\Rightarrow \frac{17}{2} - \left[\frac{13}{4} + \frac{5-2}{4}\right]$

$\Rightarrow \frac{17}{2} - \left[\frac{13}{4} + \frac{3}{4}\right]$

$\Rightarrow \frac{17}{2} - \frac{16}{4}$

$\Rightarrow \frac{34-16}{4} = \frac{18}{4}$

$\Rightarrow \frac{9}{2} = 4\frac{1}{2}$

40. (d) According to the question.

$\Rightarrow \frac{50}{x} = \frac{x}{12\frac{1}{2}}$

$\Rightarrow 50 \times \frac{25}{2} = x^2$

$\Rightarrow x^2 = 25 \times 25$

$\therefore x = 25$

41. (c)
According to the question

$\Rightarrow \frac{0.008 \times 0.01 \times 0.072}{0.12 \times 0.004}$

$\Rightarrow \frac{8 \times 1 \times 72}{12 \times 4 \times 1000}$

$\Rightarrow \frac{12}{1000} = 0.012$

42. (a) According to the question

$\Rightarrow \frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{2}{3} \text{ of } 1\frac{1}{4}}$

$\Rightarrow \frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{2}{3} \text{ of } \frac{5}{4}}$

$\Rightarrow \frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{5}{6}}$

$\Rightarrow \frac{2}{3} \times \frac{3}{1} = 2$

43. (a) According to the Question.

$\Rightarrow \frac{1}{9} + \frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{72}$

$\Rightarrow \frac{1}{9} + \frac{1}{2} - \frac{1}{3} + \frac{1}{3} - \frac{1}{4} + \frac{1}{4} - \frac{1}{5} + \frac{1}{5} - \frac{1}{6} + \frac{1}{6} - \frac{1}{7}$

$+ \frac{1}{7} - \frac{1}{8} + \frac{1}{8} - \frac{1}{9} \Rightarrow \frac{1}{2}$

44. (c)
According to the question.

$\Rightarrow 25 - 5[2 + 3\ (2 - 2\ (5-3) + 5) - 10] \div 4$

$\Rightarrow 25 - 5[2 + 3(2 - 2 \times 2 + 5) - 10] \div 4$

$\Rightarrow 25 - 5\ [2 + 3\ (2 - 4 + 5) - 10] \div 4$

$\Rightarrow 25 - 5\ [2 + 3 \times 3 - 10] \div 4$

$\Rightarrow 25 - 5\ [11 - 10] \div 4$

$\Rightarrow 25 - \frac{5}{4}$

$\Rightarrow \frac{100 - 5}{4}$

$\Rightarrow \frac{95}{4} = 23.75$

45. (d) According to the Question.

$\Rightarrow 1\frac{2}{3} \times \frac{2}{7} \times \frac{x}{1} = 1\frac{1}{4} \times \frac{2}{3} \div \frac{1}{6}$

$\Rightarrow \frac{5}{3} \times \frac{7}{2} \times \frac{x}{7} = \frac{5}{4} \times \frac{2}{3} \times \frac{6}{1}$

$\Rightarrow \frac{5x}{6} = 5$

$\Rightarrow x = 6$

46. (b) $x = \frac{1}{2 + \frac{1}{2}} = \frac{2}{5} \Rightarrow \frac{1}{x} = \frac{5}{2}$

47. (a) According to the Question

$$\Rightarrow \frac{5}{1\frac{7}{8} \text{ of } 1\frac{1}{3}} \times \frac{2\frac{1}{10}}{3\frac{1}{2}} \text{ of } 1\frac{1}{4}$$

$$\Rightarrow \frac{5}{\frac{15}{8} \times \frac{4}{3}} \times \frac{21}{10} \times \frac{2}{7} \times \frac{5}{4}$$

$\Rightarrow 2 \times \frac{3}{4}$

$\Rightarrow \frac{3}{2} = 1\frac{1}{2}$

48. (a) According to the Question

$\Rightarrow \frac{9}{20} - \left[\frac{1}{5} + \left\{\frac{1}{4} + \left(\frac{5}{6} - \frac{1}{3} + \frac{1}{2}\right)\right\}\right]$

$\Rightarrow \frac{9}{20} - \left[\frac{1}{5} + \left\{\frac{1}{4} + \left(\frac{5}{6} - \frac{5}{6}\right)\right\}\right]$

$\Rightarrow \frac{9}{20} - \left[\frac{1}{5} + \left\{\frac{1}{4} + 0\right\}\right]$

$\Rightarrow \frac{9}{20} - \left[\frac{1}{5} + \frac{1}{4}\right]$

$\Rightarrow \frac{9}{20} - \frac{9}{20} = 0$

49. (d)
According to the questions

$$\frac{0.\overline{83} \div 7.5}{2.\overline{321} - 0.\overline{098}}$$

$$\Rightarrow \frac{\frac{83-8}{90} \div \frac{75}{10}}{2+\frac{321-3}{990}-\frac{98}{990}}$$

$$\Rightarrow \frac{\frac{75}{90}\times\frac{10}{75}}{2+\frac{318}{990}-\frac{98}{990}} = \frac{\frac{1}{9}}{2+\frac{220}{990}} = \frac{\frac{1}{9}}{2+\frac{2}{9}}$$

$$\Rightarrow \frac{1}{9}\times\frac{9}{20} = \frac{1}{20} = 0.05$$

50. (c)
According to the Question

$$\Rightarrow \frac{x}{21}\times\frac{x}{189} = 1$$

$$\Rightarrow x^2 = 21\times189$$

$$\Rightarrow x = \sqrt{21\times189}$$

$$\Rightarrow x = \sqrt{7\times3\times7\times9\times3}$$

$$\Rightarrow x = 7\times3\times3$$

$$\Rightarrow x = 63$$

51. (b)
According to the Question

$$\Rightarrow \sqrt{\frac{(0.1)^2+(0.01)^2+(0.009)^2}{(0.01)^2+(0.001)^2+(0.0009)^2}}$$

$$\Rightarrow \sqrt{\frac{0.01+0.0001+0.000081}{0.0001+0.000001+0.00000081}}$$

$$\Rightarrow \sqrt{\frac{0.010181}{0.00010181}}$$

$$\Rightarrow \sqrt{100} = 10$$

52. (b)
According to the Question.

$$\Rightarrow \sqrt{\frac{(0.03)^2+(0.21)^2+(0.065)^2}{(0.003)^2+(0.021)^2+(0.0065)^2}}$$

$$\Rightarrow \sqrt{\frac{0.0009+0.0441+0.004225}{0.000009+0.000441+0.00004225}}$$

$$\Rightarrow \sqrt{\frac{0.049225}{0.00049225}}$$

$$\Rightarrow \sqrt{100} = 10$$

53. (b) According to the Question

$$\Rightarrow \sqrt{0.01}+\sqrt{0.81}+\sqrt{1.21}+\sqrt{0.0009}$$

$$\Rightarrow 0.1 + 0.9 + 1.1 + 0.03$$

$$\Rightarrow 2.13 \text{ Ans}$$

54. (c)
According to the Question

$$\Rightarrow \sqrt{\frac{(6.1)^2+(61.1)^2+(611.1)^2}{(0.61)^2+(6.11)^2+(61.11)^2}}$$

$$\Rightarrow \sqrt{\frac{(10\times0.61)^2+(10\times6.11)^2+(10\times61.11)^2}{(0.61)^2+(6.11)^2+(61.11)^2}}$$

$$\Rightarrow \sqrt{10^2\left(\frac{(0.61)^2+(6.11)^2+(61.11)^2}{(0.61)^2+(6.11)^2+(61.11)^2}\right)}$$

$$\Rightarrow \sqrt{10^2} = 10$$

55. (c)
According to the Question

$$\Rightarrow \sqrt{0.000441}$$

$$\Rightarrow \sqrt{\frac{441}{1000000}}$$

$$\Rightarrow \frac{21}{1000} = 0.021$$

56. (b)
According to the Question

$$\Rightarrow \sqrt{\frac{0.441}{0.625}}$$

$$\Rightarrow \sqrt{\frac{441}{625}}$$

$$\Rightarrow \frac{21}{25} = 0.84$$

57. (c)
According to the Question.

$$\Rightarrow \sqrt{\frac{0.342\times0.684}{0.000342\times0.000171}}$$

$$\Rightarrow \sqrt{\frac{342\times684\times1000000}{342\times171}}$$

$$\Rightarrow \sqrt{4\times1000000}$$

$$\Rightarrow 2\times1000 = 2000$$

58. (a)
According to the Question.

$$\Rightarrow \sqrt{0.00060516}$$

$$\Rightarrow \sqrt{\frac{60516}{100000000}}$$

$$\Rightarrow \frac{246}{10000} = 0.0246$$

59. (c) According to the Question.

$$\Rightarrow \sqrt{\frac{9.5\times0.085}{0.017\times0.019}}$$

$$\Rightarrow \sqrt{\frac{95\times85\times100}{17\times19}}$$

$$\Rightarrow \sqrt{5\times5\times100}$$

$$\Rightarrow 5\times10 = 50$$

60. (b) According to the Question.

$$\Rightarrow \sqrt{248+\sqrt{52+\sqrt{144}}}$$

$$\Rightarrow \sqrt{248+\sqrt{52+12}}$$

$$\Rightarrow \sqrt{248+\sqrt{64}}$$

$$\Rightarrow \sqrt{248+8}$$

$$\Rightarrow \sqrt{256}$$

$$\Rightarrow \pm16$$

61. (d) According to the Question.

$$\Rightarrow \sqrt{104.04}+\sqrt{1.0404}+\sqrt{0.010404}$$

$$\Rightarrow \sqrt{\frac{10404}{100}}+\sqrt{\frac{10404}{10000}}+\sqrt{\frac{10404}{1000000}}$$

$$\Rightarrow \frac{102}{10}+\frac{102}{100}+\frac{102}{1000}$$

$$\Rightarrow 10.2+1.02+0.102 = 11.322$$

62. (c) According to the Question

$$\Rightarrow \sqrt{40.96}+\sqrt{0.4096}+\sqrt{0.004096}+\sqrt{0.00004096}$$

$$\Rightarrow \sqrt{\frac{4096}{100}}+\sqrt{\frac{4096}{10000}}+\sqrt{\frac{4096}{1000000}}+\sqrt{\frac{4096}{100000000}}$$

$$\Rightarrow \frac{64}{10}+\frac{64}{100}+\frac{64}{1000}+\frac{64}{10000}$$

$$\Rightarrow 6.4+0.64+0.064+0.0064 = 7.11$$

63. (c) According to the Question.

$$\Rightarrow \frac{3}{5} \text{ of } x^2 = 126.15$$

$$\Rightarrow \frac{3}{5}\times x^2 = 126.15$$

$$\Rightarrow x^2 = \frac{126.15\times5}{3}$$

$$\Rightarrow x^2 = 210.25 = x = 14.5$$

64. (a) According to the Question.
As we know that the square of 252 is which is near the value of 63522

$$\therefore \quad 63522 - x = 63504$$

$$x = 18$$

65. (d)
According to Question

4	20184
3	5046
2	1682
29	841
29	29
	1

Factors are $\overbrace{2, 2}\ 3, \overbrace{2}, \overbrace{29, 29}$

$\therefore$ It should be multiplied by = 6

66. (c)
According to the Question.

$\Rightarrow \sqrt[3]{175.616}+\sqrt[3]{0.175616}+\sqrt[3]{0.000175616}$

$\Rightarrow \sqrt[3]{\frac{175616}{1000}}+\sqrt[3]{\frac{175616}{1000000}}+\sqrt[3]{\frac{175616}{1000000000}}$

$\Rightarrow \frac{56}{10}+\frac{56}{100}+\frac{56}{1000}$

$\Rightarrow 5.6+0.56+0.056 = 6.216$

67. (c)
According to the Question.

$\Rightarrow \frac{5}{3+\frac{3}{1-\frac{2}{3}}}$ $\Rightarrow \frac{5}{3+\frac{3}{\frac{1}{3}}}$

$\Rightarrow \frac{5}{3+9}$ $\Rightarrow \frac{5}{12}$

68. (b)
According to the Question.

If $2 = x + \frac{1}{1+\frac{1}{3+\frac{1}{4}}}$

$\Rightarrow 2 = x + \frac{1}{1+\frac{4}{12+1}}$

$\Rightarrow 2 = x + \frac{1}{1+\frac{4}{13}}$

$\Rightarrow 2 = x + \frac{13}{17}$

$\Rightarrow x = 2 - \frac{13}{17}$

$\Rightarrow x = \frac{34-13}{17}$

$\Rightarrow x = \frac{21}{17}$

69. (d)
According to the Question.

$\Rightarrow \frac{2}{1+\frac{1}{1-\frac{1}{2}}} \times \frac{3}{\frac{5}{6} \text{ of } \frac{3}{2} \div 1\frac{1}{4}}$

$\Rightarrow \frac{2}{1+2} \times \frac{3}{\frac{5}{6} \times \frac{3}{2} \div \frac{5}{4}}$

$\Rightarrow \frac{2}{3} \times \frac{3}{\frac{5}{4} \div \frac{5}{4}}$

$\Rightarrow \frac{2}{3} \times \frac{3}{1} \Rightarrow 2$

70. (b)
According to the Question.

$\Rightarrow 1+\frac{4}{2+\frac{3}{5-\frac{1}{2}}} - \frac{1}{2} \quad (10 \div 2)$

$\Rightarrow 1+\frac{4}{2+\frac{3\times 2}{10-1}} - \frac{1}{2} \times 5$

$\Rightarrow 1+\frac{4}{2+\frac{6}{9}} - \frac{5}{2}$

$\Rightarrow 1+\frac{4\times 9}{18+6} - \frac{5}{2}$

$\Rightarrow 1+\frac{36}{24} - \frac{5}{2}$

$\Rightarrow 1+\frac{3}{2} - \frac{5}{2}$

$\Rightarrow \frac{2+3-5}{2} = 0$

71. (c) According to the question

$$\frac{\left[\left(1+\frac{1}{10+\frac{1}{10}}\right)\times\left(1+\frac{1}{10+\frac{1}{10}}\right)-\left(1-\frac{1}{10+\frac{1}{10}}\right)\times\left(1-\frac{1}{10+\frac{1}{10}}\right)\right]}{\left[\left(1+\frac{1}{10+\frac{1}{10}}\right)+\left(1-\frac{1}{10+\frac{1}{10}}\right)\right]}$$

Let $1+\frac{1}{10+\frac{1}{10}} = \frac{111}{101} = a$

$1-\frac{1}{10+\frac{1}{10}} = \frac{91}{101} = b$

$\Rightarrow \frac{a^2-b^2}{a+b}$ $\quad [\because a^2-b^2 = (a+b)(a-b)]$

$\Rightarrow \frac{(a+b)(a-b)}{a+b}$

$\Rightarrow (a-b)$

$\Rightarrow \frac{111}{101} - \frac{91}{101}$

$\Rightarrow \frac{20}{101}$

72. (c)
According to the Question.

If $\frac{1120}{\sqrt{P}} = 80$

$\Rightarrow \frac{1120}{80} = \sqrt{P}$

$\Rightarrow \sqrt{P} = 14$

Squaring both sides

$\Rightarrow P = 196$

73. (c)
According to the Question.

$$\frac{3\frac{1}{4}-\frac{4}{5} \text{ of } \frac{5}{6}}{4\frac{1}{3}\div\frac{1}{5}-\left(\frac{3}{10}+21\frac{1}{5}\right)} - \left(1\frac{2}{3} \text{ of } 1\frac{1}{2}\right)$$

$$\Rightarrow \frac{\frac{13}{4}-\frac{4}{5}\times\frac{5}{6}}{\frac{13}{3}\times 5-\left(\frac{3}{10}+\frac{106}{5}\right)} - \left(\frac{5}{3}\times\frac{3}{2}\right)$$

$$\Rightarrow \frac{\frac{13}{4}-\frac{2}{3}}{\frac{65}{3}-\left(\frac{3+212}{10}\right)} - \frac{5}{2}$$

$$\Rightarrow \frac{\frac{39-8}{12}}{\frac{65}{3}-\frac{215}{10}} - \frac{5}{2}$$

$$\Rightarrow \frac{\frac{31}{12}}{\frac{650-645}{30}} - \frac{5}{2}$$

$$\Rightarrow \frac{31}{12}\times\frac{30}{5} - \frac{5}{2}$$

$\Rightarrow \frac{31}{2} - \frac{5}{2}$

$\Rightarrow \frac{26}{2} = 13$

74. (b)
According to the Question

$$\frac{\left[3\frac{1}{4} \div \left\{1\frac{1}{4} - \frac{1}{2}\left(2\frac{1}{2} - \overline{\frac{1}{4} - \frac{1}{6}}\right)\right\}\right]}{\frac{1}{2} \text{ of } 4\frac{1}{3}}$$

$$\Rightarrow \frac{\left[\frac{13}{4} \div \left\{\frac{5}{4} - \frac{1}{2}\left(\frac{5}{2} - \frac{1}{12}\right)\right\}\right]}{\frac{1}{2} \text{ of } \frac{13}{3}}$$

$$\Rightarrow \frac{\left[\frac{13}{4} \div \left\{\frac{5}{4} - \frac{1}{2}\left(\frac{30-1}{12}\right)\right\}\right]}{\frac{13}{6}}$$

$$\Rightarrow \frac{\left[\frac{13}{4} \div \left\{\frac{5}{4} - \frac{1}{2} \times \frac{29}{12}\right\}\right]}{\frac{13}{6}}$$

$$\Rightarrow \frac{\left[\frac{13}{4} \div \left\{\frac{30-29}{24}\right\}\right]}{\frac{13}{6}}$$

$$\Rightarrow \frac{\left[\frac{13}{4} \div \frac{1}{24}\right]}{\frac{13}{6}}$$

$\Rightarrow \frac{13}{4} \times \frac{24}{1} \times \frac{6}{13} = 36$

75. (b)
According to the Question,

$\Rightarrow \frac{0.1\times0.1\times0.1+0.2\times0.2\times0.2+0.3\times0.3\times0.3-3\times0.1\times0.2\times0.3}{0.1\times0.1+0.2\times0.2+0.3\times0.3-0.1\times0.2-0.2\times0.3-0.3\times0.1}$

As we know that,
$a^3+b^3+c^3-3abc = (a+b+c)(a^2+b^2+c^2 - ab - bc - ca)$

$= \frac{(0.1)^3+(0.2)^3+(0.3)^3-3\times0.1\times0.2\times0.3}{(0.1)^2+(0.2)^2+(0.3)^2-0.1\times0.2-0.2\times0.3-0.3\times0.1}$

$\Rightarrow \frac{|0.1+0.2+0.3|\left((0.1)^2+(0.2)^2+(0.3)^2-0.1\times0.2-0.2\times0.3-0.3\times0.1\right)|}{\left((0.1)^2+(0.2)^2+(0.3)^2-0.1\times0.2-0.2\times0.3-0.3\times0.1\right)}$

$\Rightarrow 0.1 + 0.2 + 0.3 = 0.6$

76. (d) According to the Question

$\Rightarrow \frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}+\frac{1}{110}$

$\Rightarrow \frac{1}{5}-\frac{1}{6}+\frac{1}{6}-\frac{1}{7}+\frac{1}{7}-\frac{1}{8}+\frac{1}{8}-\frac{1}{9}+\frac{1}{9}-\frac{1}{10}+\frac{1}{10}-\frac{1}{11}$

$\Rightarrow \frac{1}{5}-\frac{1}{11} \Rightarrow \frac{11-5}{55} \Rightarrow \frac{6}{55}$

77. (b) According to the question,

$I = \frac{3}{4} \div \frac{5}{6}$

$I = \frac{3}{4} \times \frac{6}{5} = \frac{9}{10}$

$II = 3 \div [(4 \div 5) \div 6]$

$II = 3 \div \left[\frac{4}{5} \times \frac{1}{6}\right]$

$II = 3 \times \frac{30}{4}$

$II = \frac{45}{2}$

$III = \left[3 \div (4 \div 5)\right] \div 6$

$III = \left[3 \times \frac{5}{4}\right] \times \frac{1}{6}$

$III = \frac{5}{8}$

$IV = 3 \div 4 (5 + 6)$

$IV = 3 \div 4 \times \frac{5}{6}$

$IV = 3 \times \frac{6}{20}$

$IV = \frac{9}{10}$

$\therefore$ I and IV are equal.

78. (b) According to the question,

$1 \div \left[1 + 1 + \left\{1 + 1 \div \left(1 + 1 \div 2\right)\right\}\right]$

$\Rightarrow 1 \div \left[1 + 1 \div \left\{1 + 1 \div \left(1 + \frac{1}{2}\right)\right\}\right]$

$\Rightarrow 1 \div \left[1 + 1 \div \left\{1 + 1 \div \frac{3}{2}\right\}\right]$

$\Rightarrow 1 \div \left[1 + 1 \div \left\{1 + \frac{2}{3}\right\}\right]$

$\Rightarrow 1 \div \left[1 + 1 \div \frac{5}{3}\right]$

$\Rightarrow 1 \div \left[1 + \frac{3}{5}\right]$

$\Rightarrow 1 \div \left[\frac{8}{5}\right] \Rightarrow \frac{5}{8}$

79. (a)
According to the question,

$$\frac{\frac{1}{3} \div \frac{1}{3} \times \frac{1}{3}}{\frac{1}{3} \div \frac{1}{3} \text{ of } \frac{1}{3}} - \frac{1}{9}$$

$$\Rightarrow \frac{\frac{1}{3}}{1 \div \frac{1}{9}} - \frac{1}{9}$$

$$\Rightarrow \frac{\frac{1}{3}}{\frac{1}{3} \times 9} - \frac{1}{9}$$

$$\Rightarrow \frac{\frac{1}{3}}{3} - \frac{1}{9}$$

$\Rightarrow \frac{1}{9} - \frac{1}{9} = 0$

80. (d)
According to the question,

$$\frac{2\frac{3}{4}}{1\frac{5}{6}} \div \frac{7}{8} \times \left(\frac{1}{3}+\frac{1}{4}\right) + \frac{5}{7} \div \frac{3}{4} \text{ of } \frac{3}{7}$$

$$\Rightarrow \frac{\frac{11}{4}}{\frac{11}{6}} \div \frac{7}{8} \times \frac{7}{12} + \frac{5}{7} \div \frac{3}{4} \times \frac{3}{7}$$

$\Rightarrow \frac{3}{2} \times \frac{8}{7} \times \frac{7}{12} + \frac{5}{7} \times \frac{28}{9}$

$\Rightarrow 1 + \frac{20}{9}$

$\Rightarrow \frac{29}{9} = 3\frac{2}{9}$

81. (d)
According to question,

$3.\overline{36} - 2.\overline{05} + 1.\overline{33}$

$\Rightarrow 3.363636\ldots - 2.050505\ldots + 1.333333\ldots$

$\Rightarrow 2.646464\ldots$

$\Rightarrow 2.\overline{64}$

82. (a) According to the question,

$$\frac{0.9\times0.9\times0.9+0.2\times0.2\times0.2+0.3\times0.3\times0.3-3\times0.9\times0.2\times0.3}{0.9\times0.9+0.2\times0.2+0.3\times0.3-0.9\times0.2-0.2\times0.3-0.3\times0.9}$$

As we know that,

$a^3+b^3+c^3-3abc = (a+b+c)(a^2+b^2+c^2-ab-bc-ca)$

$$\frac{(0.9)^3+(0.2)^3+(0.3)^3-3\times0.9\times0.2\times0.3}{(0.9)^2+(0.2)^2+(0.3)^2-0.9\times0.2-0.2\times0.3-0.3\times0.9}$$

$$\frac{(0.9+0.2+0.3)\left[(0.9)^2+(0.2)^2+(0.3)^2-0.9\times0.2-0.2\times0.3-0.3\times0.9\right]}{(0.9)^2+(0.2)^2+(0.3)^2-0.9\times0.2-0.2\times0.3-0.3\times0.9}$$

$\Rightarrow 0.9 + 0.2 + 0.3 = 1.4$

83. (b)
According to the question,

$$\left(0.\bar{1}\right)^2\left\{1-9\left(0.\overline{16}\right)^2\right\}$$

$$\Rightarrow \left(\frac{1}{9}\right)^2\left\{1-9\left(\frac{16-1}{90}\right)^2\right\}$$

$$\Rightarrow \frac{1}{81}\left\{1-9\left(\frac{15}{90}\right)^2\right\}$$

$$\Rightarrow \frac{1}{81}\left\{1-\frac{9}{36}\right\}$$

$$\Rightarrow \frac{1}{81}\times\frac{3}{4}$$

$$\Rightarrow \frac{1}{108}$$

84. (c)
According to the question,

$$\frac{1+\frac{1}{2}}{1-\frac{1}{2}}\div\frac{4}{7}\left(\frac{2}{5}+\frac{3}{10}\right) \text{ of } \frac{\frac{1}{2}+\frac{1}{3}}{\frac{1}{2}-\frac{1}{3}}$$

$$\Rightarrow \frac{\frac{3}{2}}{\frac{1}{2}}\div\frac{4}{7}\left(\frac{20+15}{50}\right)\times\frac{\frac{5}{1}}{\frac{1}{1}}$$

$$\Rightarrow \frac{3}{2}\times\frac{2}{1}\div\frac{4}{7}\left(\frac{35}{50}\right)\times\frac{6}{1}$$

$$\Rightarrow \frac{3}{2}\times\frac{2}{1}\div2$$

$$\Rightarrow \frac{3}{2}\times2\times\frac{1}{2}$$

$$\Rightarrow \frac{3}{2}$$

85. (c)
According to the question,

$$\left[0.9-\left\{2.3-3.2-\left(7.1-5.4-3.5\right)\right\}\right]$$

$$\Rightarrow \left[0.9-\left\{2.3-3.2+1.8\right\}\right]$$

$$\Rightarrow \left[0.9-0.9\right] = 0$$

86. (b) According to the question,
$(32)^3+(79)^3-(111)^3+3\times32\times79\times111$
We know that,
$a^3 + b^3 + c^3 - 3abc = 0$
When $(a+b+c) = 0$
Here, $a = 32$
$b = 79$
$c = -111$
$a+b+c = 32 + 79 - 111 = 0$
$\therefore \quad (32)^3+(79)^3-(111)^3+3\times32\times79\times111=0$

87. (b) According to the question,

$$\left(\frac{5}{2}+\frac{3}{2}\right)\left(\frac{25}{4}-\frac{15}{4}+\frac{9}{4}\right)$$

$$\Rightarrow \frac{8}{2}\left(\frac{25-15+9}{4}\right)$$

$$\Rightarrow \frac{8}{2}\times\frac{19}{4} = 19$$

88. (a)
According to the question,

$$\left(0.2\times0.2+0.01\right)\left(0.1\times0.1+0.02\right)^{-1}$$

$$\Rightarrow \frac{0.2\times0.2+0.01}{0.1\times0.1+0.02}$$

$$\Rightarrow \frac{0.04+0.01}{0.01+0.02}$$

$$\Rightarrow \frac{0.05}{0.03} = \frac{5}{3}$$

89. (c)
According to the question,

$$\frac{1}{2}+\left\{4\frac{3}{4}-\left(3\frac{1}{6}-2\frac{1}{3}\right)\right\}$$

$$\Rightarrow \frac{1}{2}+\left\{\frac{19}{4}-\left(\frac{19}{6}-\frac{7}{3}\right)\right\}$$

$$\Rightarrow \frac{1}{2}+\left\{\frac{19}{4}-\left(\frac{19-14}{6}\right)\right\}$$

$$\Rightarrow \frac{1}{2}+\left\{\frac{19}{4}-\frac{5}{6}\right\}$$

$$\Rightarrow \frac{1}{2}+\frac{47}{12}$$

$$\Rightarrow \frac{6+47}{12} \qquad \Rightarrow 4\frac{5}{12}$$

90. (a)
According to the question,

$$\frac{1}{8}+\frac{1}{8^2}+\frac{1}{8^3}+\frac{1}{8^4}+\frac{1}{8^5}$$

$$\Rightarrow \frac{1}{8}+\frac{1}{64}+\frac{1}{512}+\frac{1}{4096}+\frac{1}{32768}$$

$\Rightarrow 0.125 + 0.015625 + 0.00195313 + 0.00024414 + 0.0083052 = 0.143$

91. (d) According to the question,

$$\sqrt{\left[(12.1)^2-(8.1)^2\right]\div\left[(0.25)^2+(0.25)(19.95)\right]}$$

$$\sqrt{\frac{(12.1+8.1)(12.1-8.1)}{(0.25)^2+(0.25)(19.95)}}$$

$\therefore (a^2-b^2) = (a+b)(a-b)$

$$\Rightarrow \sqrt{\frac{20.2\times4}{0.25\left[0.25+19.95\right]}}$$

$$\Rightarrow \sqrt{\frac{20.2\times4}{0.25\times20.2}}$$

$$\Rightarrow \sqrt{\frac{4\times100}{25}}$$

$$\Rightarrow \frac{2\times10}{5} = 4$$

92. (b)
According to the question,

$$\frac{0.051\times0.051\times0.051+0.041\times0.041\times0.041}{0.051\times0.051-0.051\times0.041+0.041\times0.041}$$

We know that,

$a^3+b^3= (a+b)(a^2+b^2-ab)$

$$\Rightarrow \frac{(0.051)^3+(0.041)^3}{(0.051)^2+(0.041)^2-0.051\times0.041}$$

$$\frac{[0.051+0.041]\left[(0.051)^2+(0.041)^2-0.051\times0.041\right]}{(0.051)^2+(0.041)^2-0.051\times0.041}$$

$\Rightarrow 0.051 + 0.041 = 0.092$

93. (a) According to the question,

$$\sqrt{5+\sqrt{11+\sqrt{19+\sqrt{29+\sqrt{49}}}}}$$

$$\Rightarrow \sqrt{5+\sqrt{11+\sqrt{19+\sqrt{29+7}}}}$$

$$\Rightarrow \sqrt{5+\sqrt{11+\sqrt{19+\sqrt{36}}}}$$

$$\Rightarrow \sqrt{5+\sqrt{11+\sqrt{19+6}}}$$

$$\Rightarrow \sqrt{5+\sqrt{11+\sqrt{25}}}$$

$$\Rightarrow \sqrt{5+\sqrt{11+5}}$$

$\Rightarrow \sqrt{5+\sqrt{16}}$

$\Rightarrow \sqrt{9} = 3$

94. (d)
According to the question,

$$\frac{(75.8)^2-(55.8)^2}{20} \quad [\because a^2-b^2=(a-b)(a+b)]$$

$$\Rightarrow \frac{(75.8+55.8)(75.8-55.8)}{20}$$

$$\Rightarrow \frac{(131.6)\times 20}{20} = 131.6$$

95. (b)
According to the question,

$$\Rightarrow \frac{4-\sqrt{0.04}}{4+\sqrt{0.4}}$$

$$\Rightarrow \frac{4-0.2}{4+0.632}$$

$$\Rightarrow \frac{3.8}{4.632} = 0.8$$

96. (b)
According to the question,

$$\sqrt{0.00004761}$$

$$\Rightarrow \sqrt{\frac{4761}{100000000}}$$

$$\Rightarrow \frac{69}{10000} = 0.0069$$

97. (a)
According to the question,

$$\Rightarrow \frac{\sqrt{2}-1}{\sqrt{2}+1}$$

Rationalize above equation,

$$\Rightarrow \frac{\sqrt{2}-1}{\sqrt{2}+1}\times\frac{\sqrt{2}-1}{\sqrt{2}-1}$$

$$\Rightarrow \frac{2+1-2\sqrt{2}}{1}$$

$\Rightarrow 3-2\times1.414$

$\Rightarrow 3-2.828 = 0.172$

98. (b)
According to the question,

$$\sqrt{\frac{0.00001225}{0.00005329}}$$

$$\Rightarrow \sqrt{\frac{1225}{5329}} \Rightarrow \frac{35}{73}$$

99. (d)
According to the question,

$$\sqrt{0.00005746}$$

$$\Rightarrow \sqrt{\frac{5746}{100000000}}$$

$$\Rightarrow \frac{75.8}{10000} = 0.00758$$

100. (b)
According to the question,

$$\sqrt{(0.798)^2+0.404\times0.798+(0.202)^2+1}=?$$

$$\sqrt{(0.798)^2+(0.202)^2+2\times0.202\times0.798+1}$$

$$\Rightarrow \sqrt{(0.798+0.202)^2+1}$$

$[\because (a+b)^2 = a^2+b^2+2ab]$

$$\Rightarrow \sqrt{(1)^2+1}$$

$\Rightarrow 1+1 = 2$

101. (c)
According to the question,

$$\sqrt{11.981+7\sqrt{1.2996}}$$

$$\Rightarrow \sqrt{\frac{11981}{1000}+\frac{114}{100}\times7}$$

$$\Rightarrow \sqrt{\frac{11981}{1000}+\frac{798}{100}}$$

$$\Rightarrow \sqrt{\frac{19961}{1000}}$$

$\Rightarrow 4.467 \approx 4.5$

102. (d)
According to the question,
Multiple of 11 whose square roots are whole number.

First: $11\times11 = 121 = \sqrt{121} = 11$
Second: $11\times11\times4 = 484$
$= \sqrt{484} = 22$

There are only two numbers.

103. (b)
According to the question,
As we know that 324 is a perfect square of 18.
$\therefore$ 0.000326 – 0.000002
= 0.000324

104. (d) According to the question,

$$\Rightarrow \sqrt[3]{\frac{7}{875}}$$

$$\Rightarrow \sqrt[3]{\frac{1}{125}} \Rightarrow \frac{1}{5}$$

105. (b)
According to the question,

3	1440
3	480
2	160
2	80
2	40
2	20
2	10
5	5
	1

Factors are:

$3\times3\times2\times2\times2\times2\times2\times5$
To make a perfect cube it should be multiply by $3\times2\times5\times5$ 150
Sum = 1+8+0+6

106. (b)
According to the question,
$90\times A$ = perfect cube.
In this question go through option to save your valuable time.
Option: (b)
A = 300
$90\times300 = 27000$
(Perfect cube of 30)

107. (a)
According to the question,

$$\frac{5\frac{9}{14}}{5+\frac{3}{3+\frac{1}{\frac{3}{5}}}}$$

$$\Rightarrow \frac{5\frac{9}{14}}{5+\frac{3}{3+\frac{5}{3}}} \Rightarrow \frac{\frac{79}{14}}{5+\frac{9}{14}} \Rightarrow \frac{\frac{79}{14}}{\frac{79}{14}} = 1$$

108. (d)
According to the question,

$$\frac{2}{2+\frac{2}{3+\frac{2}{3+\frac{2}{3}}}}\times0.39$$

$$\Rightarrow \frac{2}{2+\frac{2}{3+\frac{6}{11}}}\times0.39$$

$$\Rightarrow \frac{2}{2+\frac{22}{39}\times0.39}$$

$$\Rightarrow \frac{2}{2+\frac{22}{100}}$$

$$\Rightarrow \frac{200}{222} = \frac{100}{111}$$

109. (d)
According to the question,

$$1+\cfrac{1}{1+\cfrac{1}{2}}$$

$$\Rightarrow \quad 1+\cfrac{1}{\cfrac{3}{2}} \Rightarrow 1+\frac{2}{3} \Rightarrow \frac{5}{3}$$

110. (c)
According to the question,

$$\Rightarrow 8.7-\left[7.6-\left\{6.5-\left(5.4-\overline{4.3-2}\right)\right\}\right]$$

$$\Rightarrow 8.7-\left[7.6-\left\{6.5-\left(5.4-2.3\right)\right\}\right]$$

$$\Rightarrow 8.7-\left[7.6-\left\{6.5-3.1\right\}\right]$$

$$\Rightarrow 8.7-[7.6-3.4]$$

$$\Rightarrow 8.7-4.2$$

$$\Rightarrow 4.5$$

111. (b)
According to the question,
As we know that
$a + b + c = 0$ then
$a^3 + b^3 + c^3 - 3abc = 0$
$\therefore ((0.111)^3 + (0.222)^3 + (-0.333)^3 - 3\times0.111\times0.222 \times (-0.333))^3 = 0$

112. (d)
According to the question,

$$\Rightarrow \frac{1\frac{1}{4}\div1\frac{1}{2}}{\frac{1}{15}+1-\frac{9}{10}}$$

$$\Rightarrow \frac{\frac{5}{4}\div\frac{3}{2}}{\frac{2+30-27}{30}} \Rightarrow \frac{\frac{5}{4}\times\frac{2}{3}}{\frac{5}{30}}$$

$$\Rightarrow \frac{5}{6}\times\frac{30}{5} = 5$$

113. (b)
According to the question,

$$\Rightarrow \frac{\frac{1}{2}-\frac{2}{3}+\frac{4}{5}-\frac{1}{3}+\frac{1}{5}+\frac{3}{4}}{\frac{1}{2}+\frac{2}{3}-\frac{4}{3}+\frac{4}{5}-\frac{1}{5}-\frac{3}{5}}$$

$$\Rightarrow \frac{\frac{-30-40+48-20+12+45}{60}}{\frac{15+20-40+10-6-24}{30}}$$

$$\Rightarrow \frac{15}{60}\times\frac{-30}{25} \Rightarrow \frac{-3}{10}$$

114.
(b) According to the question,

$$\Rightarrow 0.\overline{63}+0.\overline{37}+0.\overline{80}$$

$$\Rightarrow 0.6363...+0.3737....+0.8080...$$

$$\Rightarrow 1.\overline{81}$$

115.
(d) According to the question,
Let $a = 4.53 - 3.07$
$b = 3.07 - 2.15$
$c = 2.15 - 4.53$
$a + b + c = 0$
$\therefore a^3 + b^3 + c^3 = 3abc$

$$\Rightarrow \frac{a^2}{bc}+\frac{b^2}{ca}+\frac{c^2}{ab}$$

$$\Rightarrow \frac{a^3+b^3+c^3}{abc}$$

$$\Rightarrow \frac{3abc}{abc} = 3$$

116.
(b) According to the question,

$$\Rightarrow \frac{17}{15}\times\frac{17}{15}+\frac{2}{15}\times\frac{2}{15}-\frac{17}{15}\times\frac{4}{15}$$

$$\Rightarrow \left(\frac{17}{15}\right)^2+\left(\frac{2}{15}\right)^2-2\times\frac{17}{15}\times\frac{2}{15}$$

$$\Rightarrow \left(\frac{17}{15}-\frac{2}{15}\right)^2 \quad [\because (a-b)^2=a^2+b^2-2ab]$$

$$\Rightarrow \left(\frac{15}{15}\right)^2$$

$$\Rightarrow 1^2 = 1$$

117.
(d) According to the question,

$$\Rightarrow \sqrt{\frac{0.25}{0.0009}}\times\sqrt{\frac{0.09}{0.36}}$$

$$\Rightarrow \sqrt{\frac{25}{9}\times100}\times\sqrt{\frac{9}{36}}$$

$$\Rightarrow \frac{5\times10}{3}\times\frac{3}{6} \Rightarrow \frac{25}{3} \Rightarrow 8\frac{1}{3}$$

118.
(b) According to the question,

$$\Rightarrow \sqrt{0.\overline{4}}$$

$$\Rightarrow \sqrt{\frac{4}{9}}$$

$$\Rightarrow \frac{2}{3}$$

$$\Rightarrow 0.66666..... \Rightarrow 0.\overline{6}$$

119. (c)
According to the question,

$$\Rightarrow \sqrt{32}-\sqrt{128}+\sqrt{50}$$

$$\Rightarrow \sqrt{16\times2}-\sqrt{64\times2}+\sqrt{25\times2}$$

$$\Rightarrow 4\sqrt{2}-8\sqrt{2}+5\sqrt{2}$$

$$\Rightarrow \sqrt{2} = 1.414$$

120.
(d) According to the question,

$$\Rightarrow \sqrt{\left(7+3\sqrt{5}\right)\left(7-3\sqrt{5}\right)}$$

$$\Rightarrow \sqrt{49-45} \Rightarrow \sqrt{4} = 2$$

121.
(c) According to the question,

$$\Rightarrow \sqrt{400}+\sqrt{0.0400}+\sqrt{0.000004}$$

$$\Rightarrow 20 + 0.2 + 0.002 = 20.202$$

122. (c) According to the question,

$$\Rightarrow \sqrt{192}-\frac{1}{2}\sqrt{48}-\sqrt{75}$$

$$\Rightarrow 8\sqrt{3}-\frac{4}{2}\sqrt{3}-5\sqrt{3}$$

$$\Rightarrow 8\sqrt{3}-2\sqrt{3}-5\sqrt{3}$$

$$\Rightarrow \sqrt{3} = 1.732$$

123.
(c) According to the question,

$$\Rightarrow \sqrt{\frac{48.4}{0.289}} \Rightarrow \sqrt{\frac{484}{289}\times100}$$

$$\Rightarrow \frac{22}{17}\times10 \Rightarrow \frac{220}{17} = 12\frac{16}{17}$$

124.
(c) Let the number be = x
According to the question,
$\Rightarrow x^2 = (75.15)^2 - (60.12)^2$
$\Rightarrow x^2 = (75.15+60.12)(75.15 - 60.12)$
$\Rightarrow x^2 = 135.27\times15.03$
$\Rightarrow x^2 = 2033.10$
$\Rightarrow x = 45.09$

125.
(b) According to the question,
$\Rightarrow x^2 + y^2 = 386$
$\Rightarrow (5)^2 + (y)^2 = 386$
$\Rightarrow (y)^2 = 386 - 25$
$\Rightarrow y^2 = 361 \Rightarrow y = 19$

126.
(a) According to the question,
$\Rightarrow (22)^3 + (-15)^3 + (-7)^3$
$\Rightarrow 10648 - 3375 - 343 = 6930$
ALTERNATE :
$a = 22$
$b = -15$
$c = -7$
$a + b + c = 0$
So, $a^3 + b^3 + c^3 = 3abc$
$3 \times -15 \times -7 \times 22 = 6930$

127. (c)
According to the question,

2	1800
2	900
2	450
15	225
15	15
	1

Factors are: $2 \times 2 \times 2 \times 5 \times 5 \times 3 \times 3$
the smallest number multiplied by
$= 5 \times 3 = 15$
Sum of the digits = 1+5 = 6

128.
(a) According to the question,

$$\Rightarrow \frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{2}{3} \text{ of } 1\frac{1}{4}}$$

$$\Rightarrow \frac{2}{3} \times \frac{3}{\frac{5}{6} \div \left(\frac{2}{3} \times \frac{5}{4}\right)}$$

$$\Rightarrow \frac{2}{3} \times \frac{3}{\frac{5}{6} \div \frac{5}{6}}$$

$$\Rightarrow \frac{2}{3} \times \frac{3}{1} = 2$$

129.
(d) According to the question,

$$\Rightarrow \left(4\frac{11}{15} + \frac{15}{71}\right)^2 - \left(4\frac{11}{15} - \frac{15}{71}\right)^2$$

$$\Rightarrow \left(4\frac{11}{15} + \frac{15}{71} + 4\frac{11}{15} - \frac{15}{71}\right)\left(4\frac{11}{15} + \frac{15}{71} - 4\frac{11}{15} + \frac{15}{71}\right)$$

$$\Rightarrow \left(2 \times 4\frac{11}{15}\right)\left(2 \times \frac{15}{71}\right)$$

$$\Rightarrow \left(2 \times \frac{71}{15} \times 2 \times \frac{15}{71}\right) \Rightarrow 4$$

130.
(a) According to the question,

$$\Rightarrow \frac{0.1 \times 0.1 \times 0.1 + 0.02 \times 0.02 \times 0.02}{0.2 \times 0.2 \times 0.2 + 0.04 \times 0.04 \times 0.04}$$

$$\Rightarrow \frac{0.001 + 0.000008}{0.008 + 0.000064}$$

$$\Rightarrow \frac{0.001008}{0.008064}$$

$$\Rightarrow \frac{1008}{8064} = \frac{1}{8} = 0.125$$

131.
(a) According to the question,

$$\Rightarrow 5\frac{3}{x} \times 3\frac{1}{2} = 19$$

$$\Rightarrow \left(\frac{5x+3}{x}\right) \times \frac{7}{2} = 19$$

$$\Rightarrow \frac{5x+3}{x} = \frac{38}{7}$$

$$\Rightarrow 35x + 21 = 38x$$

$$\Rightarrow 3x = 21 \Rightarrow x = 7$$

132. (c)
According to the question,

$$\Rightarrow \left(\sqrt{2} + \frac{1}{\sqrt{2}}\right)^2 \quad [\because (a+b)^2 = a^2 + b^2 + 2ab]$$

$$\Rightarrow \left(\sqrt{2}\right)^2 + \left(\frac{1}{\sqrt{2}}\right)^2 + 2 \times \sqrt{2} \times \frac{1}{\sqrt{2}}$$

$$\Rightarrow 2 + \frac{1}{2} + 2 \Rightarrow \frac{4+1+4}{2}$$

$$\Rightarrow \frac{9}{2} = 4\frac{1}{2}$$

133. (d)
According to the question,

$$\Rightarrow (0.98)^3 + (0.02)^3 + 3 \times 0.98 \times 0.02 - 1$$

$$= (0.98)^3 + (0.02)^3 + 3 \times 0.98 \times 0.02(0.98 + 0.02) - 1$$

$$\left[\because (a+b)^3 = a^3 + b^3 + 3ab(a+b)\right]$$

$$\Rightarrow (0.98 + 0.02)^3 - 1 \Rightarrow (1)^3 - 1 = 0$$

ALTERNATE
$a = 0.98$
$b = 0.02$
$c = -1$
$a + b + c = 0$
So, $a^3 + b^3 + c^3 + 3abc = 0$

134. (c)
According to the question,
$\Rightarrow 71 \times 29 + 27 \times 15 + 8 \times 4$
$\Rightarrow 2059 + 405 + 32 = 2496$

135. (b)
According to the question,
$\Rightarrow 0.05 \times 5 - 0.005 \times 5$
$\Rightarrow 0.25 - 0.025 = 0.225$

136. (a)
According to the question

$$\Rightarrow \sqrt[3]{\frac{0.2 \times 0.2 \times 0.2 + 0.04 \times 0.04 \times 0.04}{0.4 \times 0.4 \times 0.4 + 0.08 \times 0.08 \times 0.08}}$$

$$\Rightarrow \sqrt[3]{\frac{0.008 + 0.000064}{0.064 + 0.000512}}$$

$$\Rightarrow \sqrt[3]{\frac{0.008064}{0.064512}} \Rightarrow \sqrt[3]{\frac{8064}{64512}}$$

$$\Rightarrow \sqrt[3]{\frac{1}{8}} \Rightarrow \frac{1}{2} = 0.5$$

137. (b)
According to the question,

$$\Rightarrow \sqrt{\frac{\left(3\frac{1}{4}\right)^4 - \left(4\frac{1}{3}\right)^4}{\left(3\frac{1}{4}\right)^2 - \left(4\frac{1}{3}\right)^2}}$$

$$\Rightarrow \sqrt{\frac{\left[\left(3\frac{1}{4}\right)^2 + \left(4\frac{1}{3}\right)^2\right]\left[\left(3\frac{1}{4}\right)^2 - \left(4\frac{1}{3}\right)^2\right]}{\left(3\frac{1}{4}\right)^2 - \left(4\frac{1}{3}\right)^2}}$$

$$\Rightarrow \sqrt{\left(\frac{13}{4}\right)^2 + \left(\frac{13}{3}\right)^2}$$

$$\Rightarrow \sqrt{\frac{169}{16} + \frac{169}{9}}$$

$$\Rightarrow \sqrt{\frac{1521 + 2704}{144}}$$

$$\Rightarrow \sqrt{\frac{4225}{144}} \Rightarrow \frac{65}{12} = 5\frac{5}{12}$$

138. (a) As we know square of 825 is 680625.
∴ The smallest number added to 680621 to make a perfect square is 4.

139. (d) According to the question,

2	392
2	196
2	98
7	49
7	7
	1

Factors are: $2 \times 2 \times \textcircled{2} \times 7 \times 7$
Smallest number is = 2

140. (C) We know that square of 47 is 2209.
∴ The smallest number added to 2203 to make a perfect square is 6.

141. (a) According to the question,
$\Rightarrow (975)^2 - (585)^2$
$\Rightarrow (975 + 585)(975 - 585)$
$\Rightarrow 1560 \times 390$
$\Rightarrow 608400 = (780)^2 \Rightarrow 780$

142. (d) According to the question,
Let two numbers are x & y.
∴ $x + y = 20$ .....(i)
$x - y = 8$ .....(ii)
Solve eq. (i) and eq. (ii)
$x = 14$
$y = 6$
∴ $x^2 - y^2 = (14)^2 - (6)^2$
$= 196 - 36 = 160$

143. (c) According to the question,
Let the two numbers are x & y.
$\therefore x^2 + y^2 = 100$ ...(i)
$x^2 - y^2 = 28$ ....(ii)
Solve eq.(i) and (ii)
$x = 8$
$y = 6$
$\therefore x+y = 8+6 = 14$

144. (b) As we know the cube of 9 is 729. Therefore 19 must be added to 710 to make it a perfect cube.

145. (d) According to the question,

$$\Rightarrow \frac{1}{3+\frac{1}{1+\frac{1}{2+\frac{1}{4}}}} \Rightarrow \frac{1}{3+\frac{1}{1+\frac{4}{9}}}$$

$$\Rightarrow \frac{1}{3+\frac{9}{13}} \Rightarrow \frac{13}{48}$$ Satisfied

146. (c) According to the question,

$$\Rightarrow 1+\frac{1}{1+\frac{1}{1+\frac{1}{1+\frac{2}{3}}}}$$

$$\Rightarrow 1+\frac{1}{1+\frac{1}{1+\frac{3}{5}}}$$

$$\Rightarrow 1+\frac{1}{1+\frac{1}{1+\frac{5}{8}}}$$

$$\Rightarrow 1+\frac{1}{1+\frac{8}{13}} \Rightarrow 1+\frac{13}{21}$$

$$\Rightarrow \frac{34}{21}$$

147. (d) According to the question,

$$\Rightarrow \frac{(3.63)^2-(2.37)^2}{3.63+2.37}$$

$$\Rightarrow \frac{(3.63+2.37)(3.63-2.37)}{(3.63+2.37)}$$

$[\because a^2 - b^2 = (a-b)(a+b)]$

$\Rightarrow 3.63 - 2.37 = 1.26$

148. (d) According to the question,
First number is $8^2 = 64$
Last number is $31^2 = 961$
$\therefore$ Total number are = 31–7 = 24

149. (d) Let the four consective natural number are 1, 2, 3, 4
According to the question,
$\Rightarrow 1\times2\times3\times4 = 24+1 = 25 = 5^2$
$\therefore 2\times3\times4\times5 = 120+1 = 121 = 11^2$
$\therefore P = 1$

150. (a) According to the question,
$\Rightarrow (256)^{0.16} \times (16)^{0.18}$
$\Rightarrow (2^8)^{0.16} \times (2^4)^{0.18}$
$\Rightarrow (2)^{1.28} \times (2)^{0.72}$
$\Rightarrow (2)^{1.28+0.72} \Rightarrow (2)^2 = 4$

151. (d) According to the question,

$$\Rightarrow \left(\frac{1}{3.5}+\frac{1}{5.7}+\frac{1}{7.9}+\frac{1}{9.11}+\frac{1}{11.13}+\frac{1}{13.15}\right)$$

$$\Rightarrow \frac{1}{2}\left(\frac{1}{3}-\frac{1}{5}+\frac{1}{5}-\frac{1}{7}+\frac{1}{7}-\frac{1}{9}+\frac{1}{9}-\frac{1}{11}+\frac{1}{11}-\frac{1}{13}+\frac{1}{13}-\frac{1}{15}\right)$$

$$\Rightarrow \frac{1}{2}\left[\frac{1}{3}-\frac{1}{15}\right] \Rightarrow \frac{1}{2}\left[\frac{5-1}{15}\right]$$

$$\Rightarrow \frac{1}{2}\times\frac{4}{15} = \frac{2}{15}$$

152. (c) According to the question,
$\Rightarrow 53 \times 87 + 159 \times 21 + 106 \times 25$
$\Rightarrow 4611 + 3339 + 2650 = 10600$

153. (c) According to the question,
$\Rightarrow \sqrt{6\,2\,5\,6\,8\,6\,3\,4\,4\,8\,9} = 6$
NOTE; For counting the digits of square root we make pairs first. Then the digits will be equal to number of pairs.

154. (b) As we know that square of 95 is 9025. Therefore smallest number which should be added to number 8958 to make a perfect square is 67.

155. (c) According to the question,

$$\Rightarrow \sqrt{\frac{8}{3}} \Rightarrow \sqrt{\frac{8\times3}{3\times3}} \Rightarrow \sqrt{\frac{24}{9}}$$

$$\Rightarrow \frac{4.898}{3} = 1.633$$

156. (b) Let the number of boys = x
the number of girls = y
According to the question,
$\Rightarrow x^2 - y^2 = 28$ .....(i)
$\Rightarrow x = y + 2$
$\Rightarrow x - y = 2$ .....(ii)
From eq. (i)
$\Rightarrow x^2 - y^2 = 28$
$\Rightarrow (x + y)(x - y) = 28$
$\Rightarrow (x + y)\times2 = 28$
$\Rightarrow x + y = 14$

157. (d) Let the three consecutive numbers are x, x + 1, x + 2.
According to the question,
$\Rightarrow x^2 + (x+1)^2 + (x+2)^2 = 110$
$\Rightarrow x^2+x^2+1+2x+x^2+4+4x = 110$
$\Rightarrow 3x^2 + 6x + 5 = 110$
$\Rightarrow 3x^2 + 6x - 105 = 0$
$\Rightarrow x^2 + 2x - 35 = 0$
$\Rightarrow x^2 + 7x - 5x - 35 = 0$
$\Rightarrow x(x+7) - 5(x+7) = 0$
$\Rightarrow (x+7)(x-5) = 0$
$\Rightarrow x = 5$ & -7
($\because$ (–) value cannot considered)
$\therefore$ Smallest number is = 5.

158. (c) According to the question,
whole number is 0, 1, 2, 3, ...
$\therefore$ Product of two whole number is 37.
$\therefore$ Factors of 37 is = 1×37
$\therefore$ Numbers are = 1, 37
The $\sqrt{37-1} = \sqrt{36} = 6$

159. (c) According to the question,

$$\sqrt[3]{(333)^3+(333)^3+(334)^3-3\times333\times333\times334}$$

As we know that
$a^3 + b^3 + c^3 - 3abc$

$$= \frac{1}{2}(a+b+c)\left[(a-b)^2+(b-c)^2+(c-a)^2\right]$$

$$= \frac{1}{2}(333+333+334)$$

$$\left[(333-333)^2+(333-334)^2+(334-333)^2\right]$$

$$= \frac{1}{2}\times1000\left[0+1+1\right]$$

$$= \frac{1}{2}\times1000\times2 = \sqrt[3]{1000} = 10$$

160. (c) Let two numbers are x & y.
$x^2 + y^2 = 146$
$25 + y^2 = 146$
$y^2 = 146 - 25$
$y^2 = 121$
$y = 11$
$\therefore y^3 = (11)^3 = 1331$

161. (b) According to question

2	1944
2	972
2	486
3	243
3	81
3	27
3	9
3	3
	1

Factors are = $\overbrace{2\times2\times2}\times\overbrace{3\times3\times3}\times\overbrace{3\times3}\times\boxed{3}$
$\therefore$ To make a perfect cube it must be mutiplied by 3

162. (a) According to the question

$\Rightarrow \frac{3000}{3}$

$\Rightarrow 1000 = 10^3$

NOTE: In such type of question go through option to save your valuable time

163. (b) According to the question

2	864
2	432
6	216
6	36
6	6
	1

Factors are : $\overbrace{2\times 2}\times \boxed{n}\times \overbrace{6\times 6\times 6}$

Here n = 2

164. (d) According to the question

$\Rightarrow \frac{0.125+0.027}{0.25-0.15+0.09}$

$\Rightarrow \frac{0.152}{0.19}$

$\Rightarrow 0.8$

ALTERNATE:

$a^3+b^3=(a+b)(a^2+b^2-ab)$

$\frac{(0.5)^3+(0.3)^3}{(0.5)^2-(0.5\times 0.3)+(0.3)^2}$

$= 0.5 + 0.3 = 0.8$

165. (d) According to the question

$\Rightarrow \frac{(7.5)^3+1}{(7.5)^2-6.5}$

$\Rightarrow \frac{(7.5)^3+1}{(7.5)^2-6.5}$

$[\because a^3+b^3=(a+b)(a^2+b^2-ab)$

$\Rightarrow \frac{(7.5+1)\left[(7.5)^2+1-7.5\times 1\right]}{(7.5)^2-7.5\times 1+1^2}$

$\Rightarrow 8.5$

166. (b) According to question

$\Rightarrow \frac{(2.697-0.498)^2+(2.697+0.498)^2}{2.697\times 2.697+0.498\times 0.498}$

Let a = 2.697

b = 0.498

$\Rightarrow \frac{(a-b)^2+(a+b)^2}{a^2+b^2}$

$\Rightarrow \frac{a^2+b^2-2ab+a^2+b^2+2ab}{a^2+b^2}$

$\Rightarrow \frac{2(a^2+b^2)}{a^2+b^2} \Rightarrow 2$

167. (d) According to the question

$\Rightarrow \sqrt{\frac{0.081\times 0.484}{0.0064\times 6.25}}$

$\Rightarrow \frac{9\times 22}{8\times 25}$

$\Rightarrow 0.99$

168. (c) According to the question.

$\Rightarrow \sqrt{13}+\sqrt{1300}+\sqrt{0.013}$

$\Rightarrow 3.6+10\sqrt{13}+\sqrt{\frac{130}{10000}}$

$\Rightarrow 3.6+10\times 3.6+\frac{11.4}{100} = 39.714$

169. (c) As we know that the square of 316 is 99856

170. (c) According to the question

$\Rightarrow (68)^2-(32)^2$

$\Rightarrow (68+32)(68-32)$

$[\because a^2-b^2=(a+b)(a-b)$

$\Rightarrow 100\times 36$

$\Rightarrow 3600 = (60)^2 = 60$

171. (a) According to the question

$\Rightarrow \frac{3\frac{1}{4}-\frac{4}{5}\text{ of }\frac{5}{6}}{4\frac{1}{3}\div\frac{1}{5}-\left(\frac{3}{10}+21\frac{1}{5}\right)}$

$\Rightarrow \frac{\frac{13}{4}-\frac{4}{5}\times\frac{5}{6}}{\frac{13}{3}\times 5-\left(\frac{3}{10}+\frac{106}{5}\right)}$

$\Rightarrow \frac{\frac{13}{4}-\frac{2}{3}}{\frac{65}{3}-\frac{3}{10}-\frac{106}{5}} \Rightarrow \frac{\frac{39-8}{12}}{\frac{650-9-636}{30}}$

$\Rightarrow \frac{31}{12}\times\frac{30}{5}=\frac{31}{2}=15\frac{1}{2}$

$\therefore$ Least fraction number should be subtracted is: $15\frac{1}{2}-15=\frac{1}{2}$ (least fraction number)

172. (b) According to question

$\Rightarrow \sqrt[2]{0.014\times 0.14x}=0.014\times 0.14\sqrt[2]{y}$

Squaring both sides

$\Rightarrow 0.014\times 0.14x = (0.014)^2\times(0.14)^2\times y$

$\Rightarrow \frac{x}{y}=0.014\times 0.14 \Rightarrow \frac{x}{y}=0.00196$

173. (a) Accroding to the question

$\Rightarrow \sqrt{5+\sqrt{11+\sqrt{19+\sqrt{29+\sqrt{49}}}}}$

$\Rightarrow \sqrt{5+\sqrt{11+\sqrt{19+\sqrt{29+7}}}}$

$\Rightarrow \sqrt{5+\sqrt{11+\sqrt{19+\sqrt{36}}}}$

$\Rightarrow \sqrt{5+\sqrt{11+\sqrt{19+6}}}$

$\Rightarrow \sqrt{5+\sqrt{11+\sqrt{25}}} \Rightarrow \sqrt{5+\sqrt{11+5}}$

$\Rightarrow \sqrt{5+\sqrt{16}} \Rightarrow \sqrt{5+4}$

$\Rightarrow \sqrt{9} = 3$

174. (c) As we know that square of '31' is 961

$\therefore$ 1000 − 961 = 39

175. (a) According to the question

$\Rightarrow \frac{4.41\times 0.16}{2.1\times 1.6\times 0.21}$

$\Rightarrow \frac{0.7056}{0.7056} = 1$

176. (a) According to the question

$\Rightarrow 0.1\times 0.01\times 0.01\times 10^7 = 100$

177. (d) According to the question

$\Rightarrow \frac{3.25\times 3.20-3.20\times 3.05}{0.064}$

$\Rightarrow \frac{10.4-9.76}{0.064} \Rightarrow \frac{0.64}{0.064} = 10$

178. (d) According to the question

$\Rightarrow \left[\frac{(0.1)^2-(0.01)^2}{0.0001}\right]+1$

$\Rightarrow \left[\frac{(0.1+0.01)(0.1-0.01)}{0.0001}\right]+1$

$\Rightarrow \frac{0.11\times 0.09}{0.0001}+1$

$\Rightarrow 99 + 1 = 100$

179. (a) According to the question

$\Rightarrow 0.5\times 5+0.25\times 0.5+0.5\times 4+0.5\times 0.75$

$\Rightarrow 2.5+0.125+2+0.375 = 5$

180. (d) According to the question

$\Rightarrow \frac{(5+5+5+5)\div 5}{3+3+3+3\div 3}$

$\Rightarrow \frac{20\div 5}{9+1} \Rightarrow \frac{4}{10} \Rightarrow \frac{2}{5}$

181. (c) According to the question

$\Rightarrow \frac{(100-1)(100-2)(100-3).....(100-200)}{100\times 99\times 98\times.....\times 3\times 2\times 1}$

$\Rightarrow \frac{99\times 98\times 97\times.....1\times 0\times 1\times(-2).....(-100)}{100\times 99\times 98\times.....3\times 2\times 1}=0$

182. (a) According to the question

$\Rightarrow 0.9 \times 0.9 \times 0.9 + 0.1 \times 0.1 \times 0.1$

$\Rightarrow 0.729 + 0.001 = 0.73$

183. (b) According to the question

$$\Rightarrow \sqrt{\frac{0.009 \times 0.036 \times 0.016 \times 0.08}{0.002 \times 0.0008 \times 0.0002}}$$

$$\Rightarrow \sqrt{\frac{9 \times 36 \times 16 \times 8}{2 \times 8 \times 2}}$$

$\Rightarrow 3 \times 6 \times 2 = 36$

184. (b) According to the question

$$\Rightarrow \sqrt{1\frac{1}{4} \times \frac{64}{125} \times 1.44} \Rightarrow \sqrt{\frac{5}{4} \times \frac{64}{125} \times \frac{144}{100}}$$

$$\Rightarrow \frac{1}{2} \times \frac{8}{5} \times \frac{12}{10} \Rightarrow \frac{24}{25}$$

185. (a) According to the question

$$\Rightarrow 2\sqrt{54} - 6\sqrt{\frac{2}{3}} - \sqrt{96}$$

$$\Rightarrow 6\sqrt{6} - 2\sqrt{\frac{2}{3} \times 9} - 4\sqrt{6}$$

$\Rightarrow 6\sqrt{6} - 2\sqrt{6} - 4\sqrt{6} \Rightarrow 0$

186. (d) According to the question

$$\Rightarrow \frac{\sqrt{24} + \sqrt{216}}{\sqrt{96}} \Rightarrow \frac{2\sqrt{6} + 6\sqrt{6}}{4\sqrt{6}}$$

$$\Rightarrow \frac{8\sqrt{6}}{4\sqrt{6}} \Rightarrow 2$$

187. (d) According to the question

$$\Rightarrow \sqrt{110 + \frac{1}{4}} \Rightarrow \sqrt{\frac{441}{4}}$$

$\Rightarrow \sqrt{110.25} \Rightarrow 10.5$

188. (c) As we know that the square of 32 is 1024

189. (c) According to the question

The square of 11 = 121

The square of 17 = 289

The square of 18 = 324

∴ Perfect square lie between 120 & 300

11, 12 ..... 17 = total no. 7

190. (c) According to the question

$\Rightarrow 7 < (2x - 3) < 17$

Check through option to save your valuable time

∴ x = 9

$2x - 3 = 2 \times 9 - 3 = 15$

$\Rightarrow 7 < 15 < 17$ (Satisfied)

191. (c) According to the question

$\Rightarrow x^2 + x = 2450$

$\Rightarrow x(x + 1) = 49 \times 50 = 2450$

$\Rightarrow \therefore x = 49$

192. (d) According to the question

$\Rightarrow \sqrt[3]{0.000064} \Rightarrow \sqrt[3]{0.008} \Rightarrow 0.2$

193. (b) According to the question

$\Rightarrow \sqrt[3]{15612 + \sqrt{154 + \sqrt{225}}}$

$\Rightarrow \sqrt[3]{15612 + \sqrt{154 + 15}}$

$\Rightarrow \sqrt[3]{15612 + \sqrt{169}} \Rightarrow \sqrt[3]{15612 + 13}$

$\Rightarrow \sqrt[3]{15625} \Rightarrow 25$

194. (c) According to the question

$\Rightarrow \sqrt[3]{0.000125} \Rightarrow 0.05$

195. (a) According to the question

$\Rightarrow \sqrt[3]{1000} + \sqrt[3]{0.008} - \sqrt[3]{0.125}$

$\Rightarrow 10 + 0.2 - 0.5 \Rightarrow 9.7$

196. (b) According to the question

5	675
5	135
3	27
3	9
3	3
	1

Factors are = $\overbrace{5 \times 5} \times \overbrace{3 \times 3 \times 3}$

∴ It must be multiplied by 5 to make a perfect cube.

197. (b) According to the question

As we know that the cube of 12 is 1728

∴ 8 must be added to the 1720 to make a perfect cube

198. (b) According to the question

3	4320
3	1440
3	480
2	160
2	80
2	40
2	20
2	10
5	5
	1

Factors are :

$\overbrace{3 \times 3 \times 3} \times \overbrace{2 \times 2 \times 2} \times \overbrace{2 \times 2} \times 5$

∴ It must be multiplied by $= 2 \times 5 \times 5 = 50$

199. (c) According to the question

$$\Rightarrow 1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{2}{3}}}}}$$

$$\Rightarrow 1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{3}{5}}}} \Rightarrow 1 + \cfrac{1}{1 + \cfrac{1}{1 + \cfrac{5}{8}}}$$

$$\Rightarrow 1 + \cfrac{1}{1 + \cfrac{8}{13}} \Rightarrow 1 + \frac{13}{21} \Rightarrow \frac{34}{21}$$

200. (a) According to the question

$$\Rightarrow \cfrac{2\frac{1}{3} - 1\frac{2}{11}}{3 + \cfrac{1}{3 + \cfrac{1}{3 + \frac{1}{3}}}} \Rightarrow \cfrac{\frac{7}{3} - \frac{13}{11}}{3 + \cfrac{1}{3 + \frac{3}{10}}}$$

$$\Rightarrow \frac{\frac{77 - 39}{33}}{3 + \frac{10}{33}} \Rightarrow \frac{38}{33} \times \frac{33}{109} \Rightarrow \frac{38}{109}$$

201. (b) According to the question

$$\Rightarrow 3 + \cfrac{3}{3 + \cfrac{1}{3 + \frac{1}{3}}} \Rightarrow 3 + \frac{3}{3 + \frac{3}{10}}$$

$$\Rightarrow 3 + \frac{3 \times 10}{33} \Rightarrow 3 + \frac{10}{11} \Rightarrow \frac{43}{11}$$

202. (a) According to the question

$$\Rightarrow 1 + \frac{1}{1 + \frac{1}{5}} \Rightarrow 1 + \frac{1}{6}{5}$$

$$\Rightarrow 1 + \frac{5}{6} \Rightarrow \frac{11}{6}$$

203. (d) According to the question

$$\Rightarrow \frac{(3.2)^3 - 0.008}{(3.2)^2 + 0.64 + 0.04}$$

$$\Rightarrow \frac{(3.2)^3 - (0.2)^3}{(3.2)^2 + 0.64 + 0.04}$$

$[\because a^3 - b^3 = (a-b)(a^2+ab+b^2)]$

$$\Rightarrow \frac{(3.2 - 0.2)[(3.2)^2 + (0.2)^2 + 3.2 \times 0.2]}{(3.2)^2 + 3.2 \times 0.2 + (0.2)^2}$$

$\Rightarrow 3.2 - 0.2 = 3$

204. (a) According to the question

$$\Rightarrow \frac{\frac{1}{3} + \frac{1}{4}\left[\frac{2}{5} - \frac{1}{2}\right]}{1\frac{2}{3} \text{ of } \frac{3}{4} - \frac{3}{4} \text{ of } \frac{4}{5}}$$

$$\Rightarrow \frac{\frac{1}{3} + \frac{1}{4}\left[\frac{4 - 5}{10}\right]}{\frac{5}{3} \times \frac{3}{4} - \frac{3}{4} \times \frac{4}{5}} \Rightarrow \frac{\frac{1}{3} - \frac{1}{4} \times \frac{1}{10}}{\frac{5}{4} - \frac{3}{5}}$$

$$\Rightarrow \frac{\frac{40 - 3}{120}}{\frac{25 - 12}{20}} \Rightarrow \frac{37}{120} \times \frac{20}{13} \Rightarrow \frac{37}{78}$$

205. (b) According to the question

$$\Rightarrow \frac{0.04}{0.03} \text{ of } \frac{\left(3\frac{1}{3}-2\frac{1}{2}\right)\div\frac{1}{2} \text{ of } 1\frac{1}{4}}{\frac{1}{3}+\frac{1}{5} \text{ of } \frac{1}{9}}$$

$$\Rightarrow \frac{4}{3}\times\frac{\left(\frac{10}{3}-\frac{5}{2}\right)\div\frac{1}{2}\times\frac{5}{4}}{\frac{1}{3}+\frac{1}{5}\times\frac{1}{9}}$$

$$\Rightarrow \frac{4}{3}\times\frac{\left(\frac{20-15}{6}\right)\times\frac{8}{5}}{\frac{1}{3}+\frac{1}{45}}$$

$$\Rightarrow \frac{4}{3}\times\frac{\frac{5}{6}\times\frac{8}{5}}{\frac{15+1}{45}} \Rightarrow \frac{4}{3}\times\frac{\frac{8}{6}}{\frac{16}{45}}$$

$$\Rightarrow \frac{4}{3}\times\frac{8}{6}\times\frac{45}{16} = 5)$$

206. (b) Let the 3 consecutive positive numbers = x, x +1, x + 2
According to the question

$\Rightarrow x^2 + (x+1)^2 + (x+2)^2 = 365$

$\Rightarrow x^2+x^2+1+2x+x^2+4+4x = 365$

$\Rightarrow 3x^2 + 6x - 360 = 0$

$\Rightarrow x^2 + 2x - 120 = 0$

$\Rightarrow x^2 + 2x = 120$

$\Rightarrow x(x+2) = 120$

$\Rightarrow x(x+2) = 10 \times 12 = 120$

$\therefore x = 10$

Sum of the numbers = 10+11+12 = 33

207. (a) According to the question

$\Rightarrow \sqrt{8+\sqrt{57+\sqrt{38+\sqrt{108+\sqrt{169}}}}}$

$\Rightarrow \sqrt{8+\sqrt{57+\sqrt{38+\sqrt{108+13}}}}$

$\Rightarrow \sqrt{8+\sqrt{57+\sqrt{38+\sqrt{121}}}}$

$\Rightarrow \sqrt{8+\sqrt{57+\sqrt{38+11}}}$

$\Rightarrow \sqrt{8+\sqrt{57+\sqrt{49}}}$

$\Rightarrow \sqrt{8+\sqrt{57+7}} \Rightarrow \sqrt{8+\sqrt{64}}$

$\Rightarrow \sqrt{8+8} \Rightarrow \sqrt{16} = 4$

208. (c) According to the question

$p - q = 5$ .....(i)

$p^2 + q^2 = 55$ .....(ii)

$\therefore (p-q)^2 = p^2 + q^2 - 2pq$

$(5)^2 = 55 - 2pq$

$25 = 55 - 2pq$

$2pq = 30 \Rightarrow pq = 15$

209. (d) Let two numbers are x and y
According to the question

$x\,y = 45$

$x-y = 4$

$\therefore (x-y)^2 = x^2 + y^2 - 2xy$

$\Rightarrow x^2 + y^2 = (x-y)^2 + 2xy$

$\Rightarrow x^2 + y^2 = 16 + 90$

$\Rightarrow x^2 + y^2 = 106$

210. (b) According to the question

$$\Rightarrow \sqrt[3]{1-\frac{127}{343}}$$

$$\Rightarrow \sqrt[3]{\frac{343-127}{343}}$$

$$\Rightarrow \sqrt[3]{\frac{216}{343}} = \frac{6}{7} = 1-\frac{1}{7}$$

211. (c) According to the question

$$\Rightarrow \frac{0.3555\times0.5555\times2.025}{0.225\times1.7775\times0.2222}$$

$$\Rightarrow \frac{3555\times5555\times2025}{225\times17775\times2222} = 4.5$$

212. (b) According to the question

$\Rightarrow 100\times10-100+2000\div100$

$\Rightarrow 1000-100+20 = 920$

213. (d) According to question

$$\Rightarrow \frac{547.527}{0.0082} = x$$

$$\Rightarrow \frac{547527}{82\times10} = x$$

$$\Rightarrow \frac{547527}{82} = \frac{x}{10}$$

214. (c) According to question

$$\sqrt{\frac{0.324\times0.081\times4.624}{1.5625\times0.0289\times72.9\times64}}$$

$$\sqrt{\frac{324\times81\times4624}{15625\times289\times729\times64}}$$

[Count the number of digits after decimal in each number in numerator as well as in denominator]

$$= \frac{\sqrt{324}\times\sqrt{81}\times\sqrt{4624}}{\sqrt{15625}\times\sqrt{289}\times\sqrt{729}\times\sqrt{64}}$$

$$= \frac{18\times9\times68}{125\times17\times27\times8}$$

$$= \frac{3}{125} = 0.024$$

215. (c) According to question

$\sqrt{0.25\times2.25} = \sqrt{0.25}\times\sqrt{2.25}$

$= 0.5\times1.5 = 0.75$

216. (b) According to question

$\because \sqrt{18225} = 135$

$= \sqrt{18225}+\sqrt{182.25}+\sqrt{1.8225}+\sqrt{0.018225}$

$$= 135+\sqrt{\frac{18225}{100}}+\sqrt{\frac{18225}{10000}}+\sqrt{\frac{18225}{1000000}}$$

$$= 135+\frac{135}{10}+\frac{135}{100}+\frac{135}{1000}$$

$= 135+13.5+1.35+0.135 = 149.985$

217. (b) According to question

$$\sqrt{21\frac{51}{169}}\times\sqrt{\frac{3600}{169}} = \frac{60}{13} = 4\frac{8}{13}$$

218. (b) According to question

$(1101)^2 = 1212201$

$\sqrt{1212201} = 1101$

Now, $\sqrt{121.2201} = \sqrt{\frac{1212201}{10000}}$

$$\frac{1101}{100} = 11.01$$

219. (a) According to question

$$= \sqrt{\frac{0.064\times0.256\times15.625}{0.025\times0.625\times4.096}}$$

$$= \frac{\sqrt{64}\times\sqrt{256}\times\sqrt{15625}}{\sqrt{25}\times\sqrt{625}\times\sqrt{4096}}$$

$$= \frac{8\times16\times125}{5\times25\times64} = 2$$

220. (b) Let the numbers be x and y (x > y) According to Question,

$x^2 - y^2 = 45$

$(x+y)(x-y) = 45$

Make factor of 45

15×3
9×5 } 3 pairs
45×1

221. (a) According to question,

$\sqrt[3]{3^n} = 27$

$(3^n)^{\frac{1}{3}} = (3)^3$

$3^{\frac{n}{3}} = (3)^3$

$\frac{n}{3} = 3$

$n = 9$

222.(c) Take a first part

$$\frac{4\frac{2}{7}-\frac{1}{2}}{3\frac{1}{2}+1\frac{1}{7}}=\frac{\frac{30}{7}-\frac{1}{2}}{\frac{7}{2}+\frac{8}{7}}=\frac{\frac{60-7}{14}}{\frac{49+16}{14}}=\frac{53}{65}$$

Second part

$$\frac{1}{2+\frac{1}{2+\frac{1}{5-\frac{1}{5}}}}=\frac{1}{2+\frac{1}{2+\frac{1}{\frac{24}{5}}}}$$

$$=\frac{1}{2+\frac{1}{2+\frac{5}{24}}}=\frac{1}{2+\frac{1}{\frac{53}{24}}}=\frac{1}{2+\frac{24}{53}}$$

$$=\frac{1}{\frac{130}{53}}=\frac{53}{130}$$

According to question,

$$\frac{53}{65}\div\frac{53}{130}$$

$$=\frac{53}{65}\times\frac{130}{53}=\frac{130}{65}=2$$

223.(c) $4-\cfrac{5}{1+\cfrac{1}{3+\cfrac{1}{2+\frac{1}{4}}}}$

$$=4-1\cfrac{5}{1+\cfrac{1}{3+\frac{1}{\frac{9}{4}}}}$$

$$=4-\frac{5}{1+\cfrac{1}{3+\frac{4}{9}}}=4-\frac{5}{1+\frac{1}{\frac{31}{9}}}$$

$$=4-\frac{5}{1+\frac{9}{31}}=4-\frac{5}{\frac{40}{31}}$$

$$=4-\frac{5\times31}{40}=4-\frac{31}{8}=\frac{1}{8}$$

According to question

$\frac{1}{8}$ part = 10 minutes

1 part = 80 minutes

$\frac{3}{5}$ part = $80\times\frac{3}{5}$ = 48 minutes

224.(a) Take first part

$$=\frac{4\frac{1}{7}-2\frac{1}{4}}{3\frac{1}{2}+1\frac{1}{7}}=\frac{\frac{29}{7}-\frac{9}{4}}{\frac{7}{2}+\frac{8}{7}}$$

$$=\frac{\frac{116-63}{28}}{\frac{49+16}{14}}=\frac{53}{28}\times\frac{14}{65}=\frac{53}{130}$$

Take second part

$$\frac{1}{2+\cfrac{1}{2+\cfrac{1}{5-\frac{1}{5}}}}=\frac{1}{2+\cfrac{1}{2+\cfrac{1}{\frac{25-1}{5}}}}$$

$$=\frac{1}{2+\cfrac{1}{2+\frac{5}{24}}}=\frac{1}{2+\cfrac{1}{\frac{53}{24}}}$$

$$=\frac{1}{2+\frac{24}{53}}=\frac{1}{\frac{106+24}{53}}=\frac{53}{130}$$

According to the question

$$\sqrt{\frac{53}{130}\div\frac{53}{130}}=\sqrt{\frac{53}{130}\times\frac{130}{53}}=\sqrt{1}=1$$

225.(c) $1+\cfrac{1}{1+\cfrac{2}{3+\frac{4}{5}}}=1+\cfrac{1}{1+\frac{2}{\frac{19}{5}}}$

$$=1+\frac{1}{1+\frac{10}{19}}=1+\frac{1}{\frac{29}{19}}$$

$$=1+\frac{19}{29}=\frac{48}{29}$$

226. (c) $\frac{1}{1+2^{a-b}}+\frac{1}{1+2^{b-a}}$

$$=\frac{1}{1+2^{a-b}}+\frac{1}{1+2^{-(a-b)}}$$

$$=\frac{1}{1+2^{a-b}}+\frac{2^{a-b}}{2^{a-b}+1}=\frac{1+2^{a-b}}{1+2^{a-b}}=1$$

227. (a) $3\frac{1}{2}-\left[2\frac{1}{4}\div\left\{1\frac{1}{4}-\frac{1}{2}\left(1\frac{1}{2}-\frac{1}{3}-\frac{1}{6}\right)\right\}\right]$

$$=\frac{7}{2}-\left[\frac{9}{4}\div\left\{\frac{5}{4}-\frac{1}{2}\left(\frac{3}{2}-\frac{1}{3}-\frac{1}{6}\right)\right\}\right]$$

$$=\frac{7}{2}-\left[\frac{9}{4}\div\left\{\frac{5}{4}-\frac{1}{2}\times1\right\}\right]$$

$$=\frac{7}{2}-\left[\frac{9}{4}\div\frac{3}{4}\right]=\frac{7}{2}-\left[\frac{9}{4}\times\frac{4}{3}\right]$$

$$=\frac{7}{2}-\frac{6}{2}=\frac{1}{2}$$

228.(b)

$$\left(2\times3\frac{3}{5}\times3\frac{3}{5}\right)+\left(2\times3\frac{3}{5}\times\frac{2}{5}\right)+\left(\frac{2}{5}\times\frac{2}{5}\right)$$

$$=\frac{18}{5}\times\frac{18}{5}+2\times\frac{18}{5}\times\frac{2}{5}+\frac{2}{5}\times\frac{2}{5}$$

$$=\left(\frac{18}{5}\right)^2+2\times\left(\frac{18}{5}\right)\times\left(\frac{2}{5}\right)+\left(\frac{2}{5}\right)^2$$

$$=\left(\frac{18}{5}+\frac{2}{5}\right)^2=\left(\frac{20}{5}\right)^2=4^2=16$$

229.(b) $\left(1-\frac{1}{n+1}\right)+\left(1-\frac{2}{n+1}\right)+\left(1-\frac{3}{n+1}\right)+\ldots$

$$\ldots\ldots+\left(1-\frac{n}{n+1}\right)$$

$$=\left(\frac{n+1-1}{n+1}\right)+\left(\frac{n+1-2}{n+1}\right)+\left(\frac{n+1-3}{n+1}\right)\ldots\ldots$$

$$+\left(\frac{n+1-n}{n+1}\right)$$

$$=\frac{n}{n+1}+\frac{n-1}{n+1}+\frac{n-2}{n+1}\ldots\ldots+\frac{1}{n+1}$$

$$=\frac{1}{n+1}(n+(n-1)+(n-2)\ldots\ldots1)$$

$$\left\{1+2+3\ldots\ldots n=\frac{n(n+1)}{2}\right\}$$

$$=\frac{1}{n+1}\left(\frac{n(n+1)}{2}\right)=\frac{n}{2}$$

230. (a) $5\frac{1}{3} \div 1\frac{2}{9} \times \frac{1}{4}\left(10 + \frac{3}{1-\frac{1}{5}}\right)$

$= \frac{16}{3} \div \frac{11}{9} \times \frac{1}{4}\left(10 + \frac{3}{\frac{4}{5}}\right)$

$= \frac{16}{3} \div \frac{11}{9} \times \frac{1}{4} \times \left(10 + \frac{15}{4}\right)$

$= \frac{16}{3} \times \frac{9}{11} \times \frac{1}{4} \times \frac{55}{4}$

$= \frac{48}{11} \times \frac{1}{4} \times \frac{55}{4} = 15$

231. (d) $\frac{1}{3-\sqrt{8}} = \frac{3+\sqrt{8}}{(3-\sqrt{8})(3+\sqrt{8})}$

$= \frac{3+\sqrt{8}}{9-8} = 3+\sqrt{8}$

Now, According to question

$= 3+\sqrt{8}+3+\sqrt{8}-6-4\sqrt{2}$

$= 6+2\sqrt{8}-6-4\sqrt{2}$

$= 2\sqrt{8}-4\sqrt{2} = 4\sqrt{2}-4\sqrt{2} = 0$

232. (c) $\frac{\sqrt{24}+\sqrt{216}}{\sqrt{96}}$

$= \frac{\sqrt{2\times2\times6}+\sqrt{6\times6\times6}}{\sqrt{4\times4\times6}}$

$= \frac{2\sqrt{6}+6\sqrt{6}}{4\sqrt{6}} = \frac{8}{4} = 2$

233. (d) $\sqrt{3\frac{33}{64}} \div \sqrt{9\frac{1}{7}} \times 2\sqrt{3\frac{1}{9}}$

$= \sqrt{\frac{225}{64}} \div \sqrt{\frac{64}{7}} \times 2\sqrt{\frac{28}{9}}$

$= \sqrt{\frac{225}{64} \times \frac{7}{64} \times \frac{28}{9}} \times 2$

$= \frac{5\times7}{8\times4} \times 2 = \frac{35}{16} \times 2 = \frac{35}{16}$

234. (b) $\frac{\sqrt{32}+\sqrt{48}}{\sqrt{8}+\sqrt{12}} = \frac{\sqrt{4\times4\times2}+\sqrt{4\times4\times3}}{\sqrt{2\times2\times2}+\sqrt{2\times2\times3}}$

$= \frac{4\sqrt{2}+4\sqrt{3}}{2\sqrt{2}+2\sqrt{3}} = \frac{4(\sqrt{2}+\sqrt{3})}{2(\sqrt{2}+\sqrt{3})}$

$= \frac{4}{2} = 2$

235. (a) Number of digits in 62478078 = 8

∴ Number of digits in its square root = 4

236. (d) If $n^r - tn + \frac{1}{4}$ to be a perfect square

$r = 2 \qquad t = \pm 1$

(If $t=1$) $n^2 - n + \frac{1}{4} = n^2 - 2\times n\times\frac{1}{2} + \frac{1}{4} = \left(n-\frac{1}{2}\right)^2$

(If $t=-1$) $n^2 + n + \frac{1}{4} = n^2 + 2\times n\times\frac{1}{2} + \frac{1}{4} = \left(n+\frac{1}{2}\right)^2$

237. (d) $33 - 4\sqrt{35}$

$= 33 - 2\times 2\sqrt{35}$

$= 33 - 2\times 2\times\sqrt{7}\times\sqrt{5}$

$= 28 + 5 - 2\times 2\sqrt{7}\times\sqrt{5}$

$= \left(2\sqrt{7}\right)^2 + \left(\sqrt{5}\right)^2 - 2\times 2\sqrt{7}\times\sqrt{5}$

$= \left(2\sqrt{7}-\sqrt{5}\right)^2$

$\sqrt{33-4\sqrt{35}} = \pm\sqrt{\left(2\sqrt{7}-\sqrt{5}\right)^2}$

$= \pm\left(2\sqrt{7}-\sqrt{5}\right)$

238. (c) $\sqrt{156.25} + \sqrt{0.0081} + \sqrt{0.0361}$

$= \sqrt{\frac{15625}{100}} + \sqrt{\frac{81}{10000}} - \sqrt{\frac{361}{10000}}$

$= \frac{125}{10} + \frac{9}{100} - \frac{19}{100}$

$= 12.5 + 0.09 - 0.19 = 12.4$

239. (d) $\sqrt{24010000} = \sqrt{2401\times10000}$

$= 49\times100$

Again, square root

$\sqrt{49\times100} = 7\times10 = 70$

$\sqrt[4]{24010000} = 70$

240. (c) Greatest 4 digit no. = 9999

9	9999	99
	81	
189	1899	
	1701	
	198	

Greatest four digit number is a perfect square = 9999 − 198 = 9801

241. (a) $(a-b)^2 = a^2 + b^2 - 2ab$

$16a^2 - 12a = (4a)^2 - 2\times4a\times\frac{3}{2} + \left(\frac{3}{2}\right)^2$

Number be added = $\left(\frac{3}{2}\right)^2 = \frac{9}{4}$

242. (a) $\left(\sqrt{4^3+15^2}\right)^3$

$= \left(\sqrt{64+225}\right)^3$

$= \left(\sqrt{289}\right)^3$

$= (17)^3 = 4913$

243. (b) $\sqrt[3]{4\frac{12}{125}} = \sqrt[3]{\frac{512}{125}}$

$= \sqrt[3]{\frac{2\times2\times2\times2\times2\times2\times2\times2\times2}{5\times5\times5}}$

$= \frac{2\times2\times2}{5} = \frac{8}{5} = 1.6$

244. (b) $x\,[-2\{-4-(-a)\}]+5\,[-2\{-2(-a)\}] = 4a$

$x\,[-2\{4a\}] + 5[-2\{2a\}] = 4a$

$x\,[-8a] + 5[-4a] = 4a$

$-8ax - 20a = 4a$

$-8ax = 24a$

$x = -\frac{24a}{8a}$

$x = -3$

245. (a)

4	17 28	42
	16	
82	128	
	164	
	36	

Least no. must be added is a perfect square = 1728+36 = 1764

1764 is perfect square of 42.

246. (a) $a = 64$, $b = 289$

$\sqrt{a} = 8$, $\sqrt{b} = 17$

$\therefore \left(\sqrt{\sqrt{a}+\sqrt{b}} - \sqrt{\sqrt{b}-\sqrt{a}}\right)^{\frac{1}{2}}$

$= \left(\sqrt{8+17} - \sqrt{17-8}\right)^{\frac{1}{2}}$

$= \left(\sqrt{25} - \sqrt{9}\right)^{\frac{1}{2}} = (5-3)^{1/2} = 2^{\frac{1}{2}}$

247. (c) $\sqrt{64009} = 253$

2	64009	253
	4	
45	240	
	225	
503	1509	
	1509	
	X	

by square root method

248. (b) Let the no. of days be x

According to question

$x \times x = 361$

$x^2 = 361$

$x = 19$ days

249. (b) $\sqrt{10^{-6} \times 0.25}$

$= 10^{-3} \times 0.5$

$= \frac{0.5}{1000} = 0.0005$

250. (d) $\frac{3\sqrt{2}}{\sqrt{3}+\sqrt{6}} - \frac{4\sqrt{3}}{\sqrt{6}+\sqrt{2}} + \frac{\sqrt{6}}{\sqrt{3}+\sqrt{2}}$

$= \frac{3\sqrt{2}}{\sqrt{6}+\sqrt{3}} \times \frac{\sqrt{6}-\sqrt{3}}{\sqrt{6}-\sqrt{3}} - \frac{4\sqrt{3}}{\sqrt{6}+\sqrt{2}} \times \frac{\sqrt{6}-\sqrt{2}}{\sqrt{6}-\sqrt{2}}$

$+ \frac{\sqrt{6}}{\sqrt{3}+\sqrt{2}} \times \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}-\sqrt{2}}$

$= \frac{3\sqrt{2}(\sqrt{6}-\sqrt{3})}{3} - \frac{4\sqrt{3}(\sqrt{6}-\sqrt{2})}{4}$

$+ \frac{\sqrt{6}(\sqrt{3}-\sqrt{2})}{1}$

$= 2\sqrt{3} - \sqrt{6} - 3\sqrt{2} + \sqrt{6} + 3\sqrt{2} - 2\sqrt{3}$

$= 0$

251. (b) $\frac{4-\sqrt{0.04}}{4+\sqrt{0.4}}$

$= \frac{4-0.2}{4+0.6} = \frac{3.8}{4.6} = \frac{38}{46} = \frac{19}{23} = 0.8$

252. (b) $\sqrt{0.05 \times 0.5 \times a} = 0.5 \times 0.05 \times \sqrt{b}$

Squaring both sides

$0.05 \times 0.5 \times a = 0.5 \times 0.5 \times 0.05 \times 0.05 \times b$

$a = 0.5 \times 0.05 \times b$

$\frac{a}{b} = \frac{5 \times 5}{10 \times 100}$

$\frac{a}{b} = \frac{1}{40} = 0.025$

253. (a) Let the no. of students in a row be x

According to question

$x \times x = 1369$

$x^2 = 1369$

$x = 37$

254. (a) $\left(\sqrt{5}+\sqrt{3}\right)^2 = 5 + 3 + 2\sqrt{15} = 8 + 2\sqrt{15}$

$\left(\sqrt{6}+\sqrt{2}\right)^2 = 6 + 2 + 2\sqrt{12} = 8 + 2\sqrt{12}$

$\sqrt{15} > \sqrt{12}$

$= \sqrt{5} + \sqrt{3} > \sqrt{6} + \sqrt{2}$

= option (a) is correct

255. (d)

2	20184
2	10092
2	5046
3	2523
29	841
29	29
	1

For making it a perfect square 20184 should be multiplied by $2 \times 3 = 6$

256. (c) $x = \sqrt{3} + \sqrt{2}$

$\frac{1}{x} = \frac{1}{\sqrt{3}+\sqrt{2}} \times \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}-\sqrt{2}}$

$\frac{1}{x} = \sqrt{3} - \sqrt{2}$

$x^3 - \frac{1}{x^3} = \left(x - \frac{1}{x}\right)^3 + 3 \times x \times \frac{1}{x}\left(x - \frac{1}{x}\right)$

$= \left(\sqrt{3}+\sqrt{2}-\sqrt{3}+\sqrt{2}\right)^3 + 3\left(\sqrt{3}+\sqrt{2}-\sqrt{3}+\sqrt{2}\right)$

$= \left(2\sqrt{2}\right)^3 + 3\left(2\sqrt{2}\right)$

$= 16\sqrt{2} + 6\sqrt{2} = 22\sqrt{2}$

257. (a) $(1001)^3$

$= 1001 \times 1001 \times 1001$

$= 1002001 \times 1001$

$= 1003003001$

258. (b)

5	625
5	125
5	25
5	5
	1

$625 = 5 \times 5 \times 5 \times 5$

Smallest number = 5

259. (d) $\left(\sqrt{6}+\sqrt{10}\right)\left(\sqrt{21}-\sqrt{35}\right)$

$\left(\sqrt{6}+\sqrt{10}\right)\left(\sqrt{21}-\sqrt{35}\right)$

$= \left(\left(\sqrt{6}+\sqrt{35}\right)+\left(\sqrt{10}-\sqrt{21}\right)\right)$

$\left(\left(\sqrt{6}-\sqrt{35}\right)-\sqrt{10}-\sqrt{21}\right)$

$= \left(\sqrt{6}-\sqrt{35}\right)^2 - \left(\sqrt{10}-\sqrt{21}\right)^2$

$= 6 + 35 - 2\sqrt{210} - 10 - 21 + 2\sqrt{210}$

$= 41 - 31 = 10$

260. (b)

$$\frac{1}{a+\frac{1}{b+\frac{1}{c+\frac{1}{2}}}} = \frac{1}{1+\frac{1}{2+\frac{1}{3+\frac{1}{2}}}}$$

$= \frac{16}{23}$

Found the value of a = 1, b = 2 & c = 3

$a + b + c = 1 + 2 + 3 = 6$

261. (d) According to the question

$x + y = \frac{46}{3}$ .....(i)

$x - y = \frac{14}{3}$ .....(ii)

Solve equation (i) and (ii)

$x = \frac{30}{3}$ $y = \frac{16}{3}$

$\therefore xy = \frac{30}{3} \times \frac{16}{3} = \frac{160}{3} = 53\frac{1}{3}$

262. (d) According to the question

$\Rightarrow \frac{(0.013)^2 + (0.007)^3}{(0.013)^2 + (0.007)^2 - 0.007 \times 0.013}$

$\Rightarrow \frac{(0.013+0.007)\left[\begin{matrix}(0.013)^2+(0.007)^2 \\ -0.007 \times 0.0163\end{matrix}\right]}{(0.013)^2 + (0.007)^2 - 0.007 \times 0.013}$

$\Rightarrow 0.02$

263. (b) According to the question

89 125

$\frac{-4}{85}$ $\frac{-6}{119}$

17 (H.C.F of two number)

$\therefore a = 17$

264. (c) $\sqrt{12+\sqrt{12+\sqrt{12+.....}}}$

Consecutive factor of $12 = 4 \times 3$

Equation contain positive sign

So, maximum number is answer 4 is answer

265. (d) $x = \sqrt[3]{7} + 3$

$x - 3 = \sqrt[3]{7}$

Cubing both sides

$x^3 - 3^3 - 3 \times x \times 3\,(x-3) = 7$

$x^3 - 27 - 9x\,(x-3) = 7$

$x^3 - 9x^2 + 27x - 34 = 0$

266. (c) $0.\overline{3} + 0.\overline{6} + 0.\overline{7} + 0.\overline{8} = x$

$\frac{3}{9} + \frac{6}{9} + \frac{7}{9} + \frac{8}{9} = x$

$x = \frac{24}{9} = \frac{8}{3} = 2\frac{2}{3}$

267. (a) $\frac{1}{\sqrt{11-2\sqrt{30}}} - \frac{3}{\sqrt{7-2\sqrt{10}}} - \frac{4}{\sqrt{8-4\sqrt{3}}}$

$= \frac{1}{\sqrt{(\sqrt{6}-\sqrt{5})^2}} - \frac{3}{\sqrt{(\sqrt{5}-\sqrt{2})^2}} - \frac{4}{\sqrt{2(4-2\sqrt{3})}}$

$= \frac{1}{\sqrt{6}-\sqrt{5}} - \frac{3}{\sqrt{5}-\sqrt{2}} \frac{4}{(\sqrt{2})\times\sqrt{(\sqrt{3}+1)^2}}$

$= \frac{1}{\sqrt{6}-\sqrt{5}} - \frac{3}{\sqrt{5}-\sqrt{2}} - \frac{2\sqrt{2}}{\sqrt{3}+1}$

Rationalising all the factors

$= \sqrt{6}+\sqrt{5} - \frac{3(\sqrt{5}+\sqrt{2})}{5-2} - \frac{2\sqrt{2}(\sqrt{3}-1)}{3-1}$

$= \sqrt{6}+\sqrt{5}-\sqrt{5}-\sqrt{2}-\sqrt{6}+\sqrt{2} = 0$

268. (b) $2^2 + 4^2 + 6^2 + ... + 40^2 = 11480$

$2^2(1^2 + 2^2 + 3^2 + ... + 20^2) = 11480$

$1^2 + 2^2 + 3^2 + ... + 20^2 = \frac{11480}{4}$

$= 2870$

269. (d) $\frac{0.2\times0.02\times0.002\times32}{0.4\times0.04\times0.004\times16}$

$= \frac{2\times2\times2\times32}{4\times4\times4\times16} = \frac{1}{4} = 0.25$

270. (a) Let the three consecutive natural number is divisible by three (माना तीन क्रमिक प्राकृतिक संख्याएं 3 से विभाजित है) = x, $x+3$, $x+6$

A.T.Q

(प्रश्नानुसार),

$x + x + 3 + x + 6 = 45$

$3x + 9 = 45$

$3x = 36$

$x = 12$

Smallest number is 12

271. (a) $1^2 + 3^2 + 5^2 + ...+ 17^2$

$= (1^2 + 2^2 + 3^2 + 4^2 + ... + 17^2) - (2^2 + 4^2 + ... 16^2)$

$= (1^2 + 2^2 + 3^2 + 4^2 + ... + 17^2) - 2^2(1^2 + 2^2 + ... + 8^2)$

using given formula

$\left[\frac{P(P+1)(2P+1)}{6}\right]$

$= \frac{17\times18\times35}{6} - 4\left[\frac{8\times9\times17}{6}\right]$

$= 1785 - 4 \times 204$

$= 1785 - 816 = 969$

272. (a)

$\left(\frac{1}{\sqrt{9}-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}}\right)$

$= \sqrt{9}+\sqrt{8} - \sqrt{8}-\sqrt{7} + \sqrt{7}+\sqrt{6} - \sqrt{6}-\sqrt{5}$

$= \sqrt{9} - \sqrt{5} = 3 - \sqrt{5}$

273. (d) $\frac{\left[2\times3^{n+4} - 9\times3^n\right]}{3^{n+2}}$

$\frac{\left[2\times3^{n+4} - 3^{n+2}\right]}{3^{n+2}} = \frac{3^{n+2}\left(2\times3^2 - 1\right)}{3^{n+2}}$

$=[2 \times 9 - 1) = 17$

274. (d) Unit digit of $252^{126} + 244^{152}$

$= 4 + 4$

$= 8$

Hence the remainder (अत: शेष) = 8