ANSWER SHEET

Exersice 1.1

1. (i) (a) -9^0 C (b) -5^0 C (c) 6^0 C (d) 20^0 C (ii) 27^0c (iii) 11^0C (iv) yes
2. Positive 1300 Rs. 3. (i) -7 (ii) -2 (iii) -1100 (iv) -29 (v) 0
4. (i) > (ii) = (iii) > (iv) < (v) =
6. (i) (-3) (ii) 0 (iii) (+5) (iv) (+4) 7. (i) b (ii) c (iii) a

Exersice 1.2

1. (i) -12 (ii) -24 (iii) 720 (iv) 0 (v) 630 (vi) 140 (vii) 30
3. 9 minute 4. 9 balls 5. (i) -5 (ii) -5 (iii) 1 (iv) -25 (v) 0
   (vi) -15 (vii) 3 6. (i) 100 Pencil (ii) 140 Pencil
8. (i) +60 (ii) -15 (iii) -5 7.

x	2	3	-4	-2	1
3	6	9	-12	-6	3
-2	-4	-6	+8	-4	-2
-1	-2	-3	4	2	-1
4	8	12	-16	-8	4
2	4	6	-8	-4	2

Exersice 1.3

1. (i) (b) (ii) (c) (iii) (d) (iv) (a)
2. (i) Commutativity (ii) -1 Distributivity
   (iii) -4 Associativity
3. (i) 1440 (ii) -78000 (iii) 432 (iv) 44955
4. (i) True (ii) False (iii) True (iv) True
   (v) False

Exersice 2.1

1. (i) $\frac{1}{4}, \frac{3}{12}, \frac{4}{16}, \frac{5}{20}, \frac{6}{24}$ (ii) $\frac{6}{7}, \frac{12}{14}, \frac{18}{21}, \frac{24}{28}, \frac{30}{35}$

   (iii) $\frac{7}{4}, \frac{14}{8}, \frac{21}{12}, \frac{28}{16}, \frac{35}{20}, \frac{42}{24}$ (iv) $\frac{20}{9}, \frac{40}{18}, \frac{60}{27}, \frac{80}{36}, \frac{120}{54}$

2. (i) > (ii) = (iii) > (iv) < 3. (i) 1/5 < 3/7 < 7/10 (ii) 2/9 < 8/21 < 2/3
4. (i) 13/5 (ii) 39/8 (iii) 31/35 (iv) 39/8 (v) 37/6 (vi) 13/5
5. 47/6 6. Neela took more time and $\frac{4}{35}$ hours 7. Meena's share = $\frac{4}{15}$

Exersice 2.2

1. (i) (b) (ii) (c) (iii) (a) 2. (i) 2/3 (ii) 2 x 1/2, 1 (iii) 9/4 3.(i) 24/5 (ii) 8/3 (iii) 15
   (iv) 9 (v) 40/3 (vi) 2 (vii) 16/7 (viii) 20 (ix) 9/16 (x) 48/35
5. (i) 9 (ii) 6 (iii) 10 (iv) 18 (v) 40 (vi) 12
6. (i) 32/5 (ii) 52/15 (iii) 8/5 (iv) 29/8 (v) 3/25 (vi) 3/70
7. (i)19/20 (ii) 48/5 (iii)15/7 (iv) 119/8 8. (i) 3/5 of 5/8 (ii) 1/2 of 6/7
9. (i) 6 liter (ii) 3 liter (iii) 6 liter 10. 9/2 meter (11) 22 hours (12) 319/5 Km
13. (i) 2/10 (ii) 1/5
14. (i) 2/3 (ii) 2/3

Exercise 2.3

1. (i) 18 (ii) $\frac{7}{5}$ (iii) $\frac{9}{4}$ (iv) $\frac{3}{2}$ (v) 9 (vi) 21
2. (i) $\frac{7}{3}$ (ii) $\frac{8}{1}$ (iii) $\frac{7}{12}$ (iv) $\frac{8}{5}$ (v) $\frac{7}{9}$ (vi) $\frac{1}{5}$
3. (i) $\frac{3}{14}$ (ii) $\frac{31}{49}$ (iii) $\frac{6}{65}$ (iv) $\frac{7}{8}$ (v) $\frac{2}{5}$ (vi) $\frac{7}{12}$
4. (i) $\frac{49}{24}$ (ii) $\frac{11}{3}$ (iii) $\frac{4}{15}$ (iv) $\frac{8}{3}$ (v) $\frac{48}{35}$ (vi) $\frac{21}{25}$
5. 24 parts 6. 23 pieces

Exercise 2.4

1. (i) 0.7 (ii) 2.30 (iii) 7 (iv) 1.49 (v) 3.570 (vi) 85.2
2. (i) .07 Rs. (ii) .800 kg. (iii) .075 km. (iv) 3.470 km. (v) 7.007 kg. (vi) 47.075 km.
3. (i) $2 \times 10 + 5 \times 1 + 0 \times \frac{1}{10} + 3 \times \frac{1}{100}$ (ii) $2 \times 1 + 5 \times \frac{1}{10} + 0 \times \frac{1}{100} + 3 \times \frac{1}{1000}$
   (iii) $2 \times 100 + 0 \times 10 + 5 \times 1 + 3 \times \frac{1}{10}$ (iv) $2 \times 1 + 0 \times \frac{1}{10} + 5 \times \frac{1}{100} + 3 \times \frac{1}{1000}$
4. (i) 30 (ii) 3 (iii) $\frac{3}{100}$ (iv) $\frac{3}{1000}$
5. 23.950 kg. 6. Bhavana, 11.75 Rs. 7. 5.3 km 8. 9.13

Exercise 2.5

1. (i) 37.8 (ii) 160.2 (iii) 0.4 (iv) 2.58 (v) 1248.2 (vi) 48.64
2. (i) 37.2 (ii) 3.7 (iii) 5 (iv) 108 (v) 738 (vi) 6
   (vii) 47030 (viii) 30 (ix) 42700 3.(i) 14.7 (ii) 3.125 (iii) 1.68
   (iv) 0.04 (v) 1.0101 (vi) 96.24
4. 20.48 cm^2 5. 264.285 6. 25 kg 7. 13.5 cm 8. 371.25 Rs.

Exercise 2.6

1. (i) 0.2 (ii) 0.06 (iii) 0.66 (iv) 210.6 (v) 2.07 (vi) 180
   (vii) 2 (viii) 0.03
2. (i) 0.42 (ii) 9.86 (iii) 0.02 (iv) 1.432 (v) 0.86 (vi) 0.0805
   (vii) 0.4432 (viii) 0.0013 (ix) 0.00006
3. (i) 4 (ii) 9.1 (iii) 6 (iv) 0.5 (v) 20.5 (vi) 3.4
   (vii) 44.2 (viii) 510 (ix) 31
4. 42.5 5. 1.2 km 6. 40.5 km
7. 121.4404 8. 59.2 meter

Exercise 3.1

1. (i) 6 (ii) 9 (iii) 0 (iv) 5 (v) 1 (vi) 9
   (vii) 4 (viii) 6 (ix) 4
2. (i) 324 (ii) 121 (iii) 11449 (iv) 225 (v) 40000 (vi) 729
3. (ii), (iii),(vi) 4. (i) 16 (ii) 49 (iii) 100
5. 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 6. (i) 21 (ii) 35 (iii) 61
7. (i), (iii) are pythogorian triplets

Exercise 3.2

1 (i) 2, 8 (ii) 4, 6 (iii) 1, 9 (iv) 3, 7
2 (i) and (iii) can not be perfect square
3 (i) 36 (ii) 27 (iii) 42
(iv) 63 (v) 66 (vi) 40
4 (i) 7 (ii) 11 (iii) 5
5 (i) 10 (ii) 3 (iii) 7 6. 49 7. 900

Exercise 3.3

1. (i) 21 (ii) 26 (iii) 35 (iv) 54 (v) 68 (vi) 89
2. (i) 11 (ii) 16 (iii) 67 (iv) 245
3. (i) 2.5 (ii) 1.7 (iii) 5.7 (iv) 5.6 (v) 7.6
4 (i) 21 (ii) 25 (iii) 4 (iv) 100
5. (i) 26 (ii) 27 (iii) 50 (iv)10
6. 24 chairs, numbers of chairs in each row = 32 7. 76 meter 8. 3

Exercise 4

1. (i) $\frac{-4}{6}, \frac{-6}{9}, \frac{-8}{12}, \frac{-10}{15}, \frac{-12}{18}$ (ii) $\frac{2}{10}, \frac{3}{15}, \frac{4}{20}, \frac{5}{25}, \frac{6}{30}$

   (iii) $\frac{-10}{6}, \frac{-15}{9}, \frac{-20}{12}, \frac{-25}{15}, \frac{-30}{18}$ (iv) $\frac{8}{-18}, \frac{12}{-27}, \frac{16}{-36}, \frac{20}{-45}, \frac{24}{-54}$

2. $\frac{-25}{60}, \frac{40}{-96}, \frac{-45}{108}$ 3. $\frac{24}{-56}, \frac{-60}{140}, \frac{75}{-175}$

4.(i) $\frac{-3}{5}$ (ii) $\frac{11}{-18}$ (iii) $\frac{5}{2}$ (iv) $\frac{-4}{5}$

6. (i) $\frac{2}{3}$ $\boxed{>}$ $\frac{-5}{7}$ (ii) $\frac{-1}{4}$ $\boxed{>}$ $\frac{1}{-3}$ (iii) $\frac{-3}{5}$ $\boxed{<}$ $\frac{-1}{3}$

(iv) $\frac{2}{7}$ $\boxed{<}$ $\frac{1}{2}$ (v) $\frac{-1}{2}$ $\boxed{=}$ $\frac{1}{-2}$ (vi) $\frac{-5}{4}$ $\boxed{<}$ $\frac{3}{5}$

7. (i) $\frac{-8}{3}, \frac{-7}{3}, -2, \frac{-5}{3}, \frac{-4}{3}$ etc. (ii) $\frac{-5}{6}, \frac{-4}{6}, \frac{-3}{6}, \frac{-2}{6}, \frac{-1}{6}$ etc.

(iii) $\frac{-55}{70}, \frac{-54}{70}, \frac{-53}{70}, \frac{-52}{70}, \frac{-51}{70}$ etc. (iv) $\frac{6}{40}, \frac{7}{40}, \frac{8}{40}, \frac{9}{40}, \frac{11}{40}$ etc.

(v) $\frac{-3}{5}, \frac{-2}{5}, \frac{-1}{5}, \frac{0}{5}, \frac{1}{5}$ etc. (vi) $\frac{-9}{5}, \frac{-8}{5}, \frac{-7}{5}, \frac{-6}{5}, \frac{-4}{5}$ etc.

8. (i) $\frac{-8}{20}, \frac{-10}{25}, \frac{-12}{30}$ (ii) $\frac{8}{-12}, \frac{10}{-15}, \frac{12}{-18}$

(iii) $\frac{4}{12}, \frac{5}{15}, \frac{6}{18}$ (iv) $\frac{4}{-20}, \frac{5}{-25}, \frac{6}{-30}$

9. (i) $\frac{-3}{4}, \frac{-1}{2}, \frac{1}{2}, \frac{3}{4}$ (ii) $\frac{-3}{2}, \frac{-3}{4}, \frac{-3}{7}$

(iii) $-2, \frac{-2}{15}, \frac{-7}{11}, 0, \frac{7}{15}$ (iv) $\frac{1}{6}, \frac{2}{5}, \frac{5}{9}, \frac{4}{7}$

10. (i) $\frac{-9}{24}, \frac{5}{-12}, \frac{-7}{16}, \frac{-3}{4}$ (ii) $\frac{1}{6}, \frac{-5}{6}, \frac{-8}{9}, \frac{-11}{12}$

(iii) $\frac{1}{3}, \frac{-2}{3}, \frac{-5}{6}, \frac{4}{-3}$ (iv) $\frac{3}{5}, \frac{-17}{-30}, \frac{8}{-15}, \frac{-7}{10}$

Exercise 5.1

1 (i) 7^5 (ii) $3^3 \times 7^2$ (iii) $a^3 \times b^2$ (iv) $5^2 \times t^3$

2. (i) $2 \times 2 \times 2 \times 2 \times 2 = 2^5$ (ii) $3 \times 3 \times 3 \times 3 = 3^4$

(iii) $7 \times 7 \times 7 = 7^3$ (iv) $5 \times 5 \times 5 = 5^3$

3. (i) $2^5 > 5^2$ (ii) $3^5 > 5^3$

(iii) $3^{10} > 10^3$ (iv) $3^7 > 7^3$

4. (i) $2^2 \times 3^4$ (ii) 5^4 (iii) $2^3 \times 3^3 \times 5$ (iv) $2^3 \times 3^2 \times 5^2$

5. (i) 162 (ii) 1715 (iii) 500 (iv) 9000

(v) 0

6. (i) -1 (ii) 625 (iii) -128

Exercise 5.2

1- (i) 3^{15} (ii) $(4)^9$ (iii) a^9 (iv) 3^6
(v) t^3 (vi) 6 (vii) 2^{18} (viii) a^{20}
(ix) 40^5 (x) $(ab)^3$ (xi) $\left(\frac{7}{6}\right)^5$ (xii) 1
(xiii) $\frac{1}{7^3}$ (xiv) 1

2. (i) 3^3 (ii) 4^6 (iii) 1 (iv) 1
(v) $3^5 \times a^3$ (vi) 7^{12} (vii) $\frac{1}{3^2}$ (viii) a^{11}
(ix) 3

3. (i) 91 (ii) 45 (iii) 400

Exercise 5.3

1. (i) 5.0×10^5 (ii) 4.83×10^6 (iii) 3.94×10^{11} (iv) 3.0×10^7 (v) 1.8×10^5
2. 1.5×10^8 3. 1.095×10^6 4. 3.9×10^8
5. (i) 25000 (ii) 1750000 (iii) 121000000 (iv) 450000

Exercise 6.1

1. 3500 2. 300 3. 770

Exercise 6.2

1.(i) 5232 (ii) 2885 (iii) 3089
2.(i) 870 (ii) 5300 (iii) 432000 (iv) 320
(v) 3600 (vi) 8019 (vii) 98901 (viii) 891

Exercise 6.3

1. (1) > (2) > (3) = (4) < (5) <

Exercise 6.4

1. (i) 5/9 (ii) 3/5 (iii) 11/10 (iv) 26/15 (v) 47/60 (vi) 53/30
2. (i) 3/5 (ii) 3 (iii) 2/3 (iv) 23/60 (v) 7/4 (vi) 2/3

Exercise 6.5

(1) 3/40 (2) $30\frac{1}{4}$ (3) $6\frac{3}{16}$ (4) $12\frac{6}{25}$ (5) $156\frac{3}{16}$ (6) $72\frac{10}{49}$ (7) 13 (8) 11 (9) 14
(10) 26

Exercise 6.6

1. (i) 324 (ii) 1764 (iii) 6889 (iv) 16129 (v) 18496

Exercise 6.7

(1) 13 (2) 18 (3) 24 (4) 45 (5) 55 (6) 95
(7) 32 (8) 21

Exercise 6.8

(1) quotient= 2113 reminder =01
(2) quotient= 1005 reminder =04
(3) quotient= 11 reminder =02
(4) quotient=3216 reminder =26
(5) quotient=223 reminder=05
(6) quotient=105 reminder=31

Exercise 7.1

1. complimentary angles (iii), (iv), (vi), supplimentary angles (i), (ii), (v) 2. $45^0, 45^0$ 3. 90^0
4. $\angle POQ$ and $\angle QOR$, $\angle POQ$ and $\angle QOS$, $\angle POR$ and $\angle ROS$, $\angle QOR$ and $\angle ROS$
5. (i) $\angle QOT$ and $\angle TOP$
   (ii) $\angle QOS$ and $\angle SOP$, $\angle POR$ and $\angle ROQ$
   (iii) $\angle ROQ$ and $\angle SOP$
   (iv) $\angle QOS$ and $\angle SOT$, $\angle SOT$ and $\angle TOP$, $\angle TOP$ and $\angle POR$
   (v) $\angle QOS$ and $\angle SOT$
6. (iii), (iv) 7. (i) $x = 55^0, y = 125^0$ (ii) $x = 160^0$ (iii) $x = 55^0, y = 35^0, z = 125^0$
8. 1. True 2. False 3. True 4. True

Exercise 7.2

1. (i) Intersecting lines-l,m (ii) Parallel lines - p,q (iii) Intersecting lines-y, z, Transversal line - x
2. (i) $\angle 1$ and $\angle 7$, $\angle 4$ and $\angle 6$
   (ii) $\angle 2$ and $\angle 8$, $\angle 3$ and $\angle 5$
   (iii) $\angle 1$ and $\angle 5$, $\angle 2$ and $\angle 6$, $\angle 4$ and $\angle 8$, $\angle 3$ and $\angle 7$
   (iv) $\angle 1$ and $\angle 6$, $\angle 4$ and $\angle 7$
3. (i) $x = 60^0$ (ii) $x = 50^0$ (iii) $x = 70^0$ (iv) $x = 115^0$ 4. (i) and (ii)

5.(i) x = 95°, y = 55° (ii) x =115° , y = 65°

Exercise 8.1

1. (i) $x = 35^\circ$ (ii) $x = 120^\circ$ (iii) $x = 50^\circ$ (iv) $x = 60^\circ$

2. (i) $x = 130^\circ$ (ii) $x = 75^\circ$ (iii) $x = 65^\circ$ (iv) $x = 50^\circ$ (v) $x = 30^\circ$ (vi) $x = 95^\circ$

3. (i) $x = 70^\circ$ y = 50° (ii) $x = 75^\circ$ y = 105° (iii) $x = 40^\circ$ y = 100° (iv) $x = 70^\circ$ y = 70°

4. 45° 5. 80° 6. 30°, 60°, 90°

7. No. Two angles of triangle are 70° and 21° so the third angle will be 89°, which is not right angle.

8. (ii) , (iii)

Exercise 8.2

1.(i), (iv), (vi) 2.60°

3. (i) acute angle (ii) obtuse angle (iii) obtuse angle (iv) isosceles
(v) Median (vi) centroid (vii) altitude

4- B = 55°, C = 55° 6. Minimum = 4 cm, Maximum = 8 cm

Exercise 9.1

1. AB ↔ PQ, BC ↔ QR, CA ↔ RP, ∠A = ∠P, ∠B = ∠Q व ∠C = ∠R

2. (i) ∠z (ii) xy (iii) ∠y (iv) yz

3. (i) Length (ii) Sides (iii) 60°

5. ∠ABC = ∠ONM, ∠PQR = ∠MLK, ∠XYZ = ∠RST

Exercise 9.2

1. (i) 3.5 cm (ii) 2 cm (iii) 2.9 cm (iv) 45° (v) 70° (vi) 65°

2. (i) ASA, Δ TQP ≅ Δ TRS (ii) SAS, Δ ABD ≅ Δ CDB (iii) SSS, Δ ABC ≅ Δ ADC

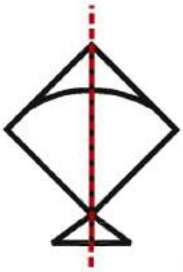
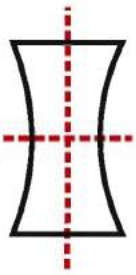
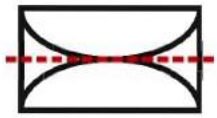
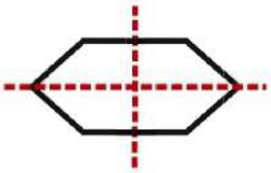
3. (i) Δ PRQ ≅ Δ PSQ (ii) Δ MXZ ≅ Δ NYZ (iii) Δ QRP ≅ Δ TSQ

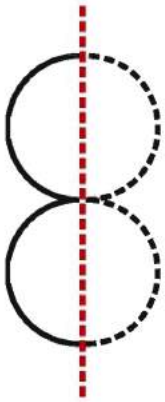
4. (i) Δ ADC (ii) Δ PSR

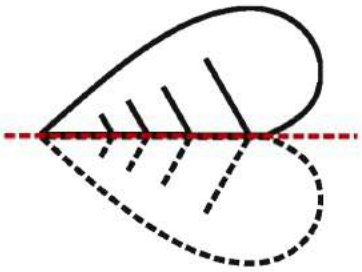
5. Yes, RHS and SSS 6. (ii) Δ PQR ≅ Δ QPS 7. Yes

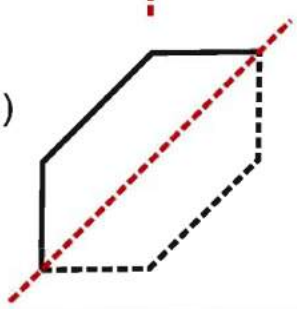
Exercise 11.1

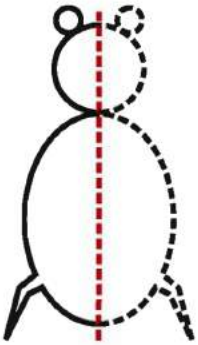
(1) (i), (iii), (iv)

(2) (i)  (ii)  (iii)  (iv) 

(3) (i) 

(ii) 

(iii) 

(iv) 

Exercise 11.2

(1) (i)4, (ii)3, (iii)2 (iv) 2 (v) 2

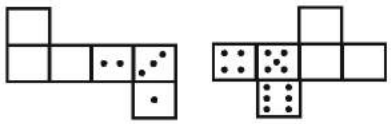
(2) Circle, Square

(3) Rectangle, Parallelogram

(4) 120^0, 180^0, 240^0, 300^0, 360^0

Exercise 12.1

2. (i) c (ii) a

3. 

Exercise 12.3

2. (i) Sphere (ii) Cone (iii) Cuboid (iv) Cube

3. (i) Top, Side, Front (ii) Front, Side, Top

5. (i) True (ii) False (iii) True

Exercise 13.1

1. (i) $9x^2-8$

$9x^2$, -8

$9 \times x \times x$, -8

$3 \times 3 \times x \times x$, $-2 \times -2 \times -2$

(ii) $12x^2y + 8xy^2 - 15y^3$

$12x^2y$, $8xy^2$, $-15y^3$

$12 \times x \times x \times y$, $8 \times x \times y \times y$, $-15 \times y \times y \times y$

$2 \times 2 \times 3 \times x \times x \times y$, $2 \times 2 \times 3 \times x \times y \times y$, $-5 \times 3 \times y \times y \times y$

(iii) $a^3 - b^3$

a^3 , $-b^3$

$a \times a \times a$, $b \times b \times b$

2. (i) 4 (ii) coefficient of $y^2 = 9x^2$, coefficient of $x^2 = 9y^2$, coefficient of $9 = x^2y^2$

(iii) coefficient of $x^3 = \frac{-8y^3}{5}$, coefficient of $y^3 = \frac{-8x^3}{5}$, coefficient of $x^3y^3 = \frac{-8}{5}$

(iv) coefficient of $a^2 = \frac{9}{13} b^2$, coefficient of $b^2 = \frac{9}{13} a^2$,

Exercise 13.2

1. (i) $3t + 2tz$
   (ii) $13xy$
   (iii) $3x-4y-3xy-3$
   (iv) $-m^2-n^2-1$
   (v) $8x+8z+4$
   (vi) $3ba+ab^2+2a^2b^2$
   (vii) 0

2.(i) $6x^2$
(ii)2b
(iii)$3x^2-8xy+4$
(iv)$10xy-7x^2-7y^2$
(v)$8p^2+7q^2-5pq$
(vi) x^2-5x-5

3. $6x - 9y - z$ 4. p- q

Exercise 13.3

1. (i) -1 (ii) -1 (iii) -3 (iv)-3 (v)1
2. (i) 1 (ii) 1 (iii) -3
3. (i) 0 (ii)16 (iii) 8
4. (i) 2 (ii) 3 (iii) 0 (iv) 6

Exercise 14.1

(1.) $x = 4$ (2.) $x = 6$ (3.) $x = 8$ (4.) $x = 2$ (5.) $x = 4$

(6.) $x = 27$ (7.) $x = 18$ (8.) $x = 20$ (9.) $x = 3$ (10.) $l = \frac{4}{9}$

(11.) $m = \frac{17}{14}$ (12.) $z = -2$ (13.) $q = -8$ (14.) $x = 0$ (15.) $n = 12$

(16.) $t = \frac{14}{5}$ (17.) $m = 2$

Exercise 14.2

(1.) 31 (2.) 8 (3.) 6 (4.) 8,9,10 (5.) 11,13,15

(6.) 14,16,18 (7.) 11 year (8.) 13 year (9.) 12 (10.) 15 year (11.) 150

Exercise 15.1

(1) (i) 1 : 5 (ii) 17 : 20 (2) (i) 13 : 19 (ii) 9 : 8

(3) (i) 6 : 10, 9 : 15 (ii) 14 : 22, 21 : 33 (4) (i) 5: 1 (ii) 1 : 5

(5) $x = 18$

6. (i) Bheema 800 gm., Bheekha 1 kg. 250 gm. (ii) Bheekha Halwai 7. 25 worker

8. height of tree (h) = 15 m. 9. 39 minute 10. 2 kg 300 gm.

Exercise 15.2

(1) (i) 75% (ii) 77 %(iii) 99 % (iv) 333 %

(2) (i) 84% (ii) 125% (iii) 8.75% (iv) 0.1%

(3) (i) $\frac{13}{25}$ (ii) $\frac{5}{4}$ (iii) $\frac{1}{16}$ (iv) $\frac{1}{3}$

(4) (i) 45 (ii) 306.25 (iii) 93.75 (iv) 5.20

(5) (i) 150 (ii) 50 (iii) 9000

(6) (i) 0.07 (ii) 0.014 (iii) 0.0003 (iv) 0.167

(7) 75 boys (8) 2000 plants (9) 90%

(10) martyrs day =80% , Tilak club 95%

Exercise 15.3

(1) 11 $\frac{1}{9}$% profit

(2) (i) 14 $\frac{2}{7}$% Loss (ii) 3$\frac{1}{3}$% profit (iii) 20% profit (iv) 13800 Rs.

(3) Increased by 6 % (4) 14 $\frac{7}{12}$% (5) 7130 Rs.

Exercise 15.4

(1) 1620 Rs.

(2) 4480 Rs.

(3) 560 Rs., 4060 Rs.

(4) 4% Principal

(5) 4000 Rs. Principal

Exercise 16.1

(1) 480 meter (2) 13 cm

(3) 1250 m^2 (4) 340 meter

(5) 800 meter (6) area of square = 25 cm^2 more

(7) (i) 9 cm (ii) 24 cm (iii) 27 cm

Exercise 16.2

(1) (i) 54 cm^2 (ii) 16.5 cm^2 (iii) 14 cm^2 (iv) 9.75 cm^2

(2) 24 cm , 6 cm (3) 24 cm (4) (i) 12 cm^2 (ii) 3 cm

(5) 64 cm^2

(6) 19 cm^2 , BE = 5 cm (7) 40 cm , 16 cm (8) 1850 m^2

(9) (i) 464 m^2 (ii) Rs.1,25,280

(10) (i) Rs.1,68,000 (ii) 9775 m^2

Exercise 16.3

(1) (i)132 cm (ii)176 mm (iii) 66 cm

(2) (i) 78.57 cm^2 (ii) 1386 m^2 (iii) 98.56 cm^2

(3) Radius = 21cm, 1386 m^2 (4) Radius = 7 cm, 154 cm^2

(5) 30.84 cm (6) 252.56 m^2 (7) 188.57 cm^2

(8) 28.26 cm^2 (9) 600 cm^2 (10) 16 : 25

(11) Rs.154 (12) 452.16 cm^2 (13) 253.14 cm^2

(14) 4 round (15) Rs.15,246 (16) 125.6 cm

Exercise 17.1

(1) (i) in 2015 - 16 (ii) 2014 - 15 (iii) 550
(2) (i) Hindi (ii) 2014 (iii) 2012
(5) (i) Bikaner (ii) Ajmer (iii) Kota

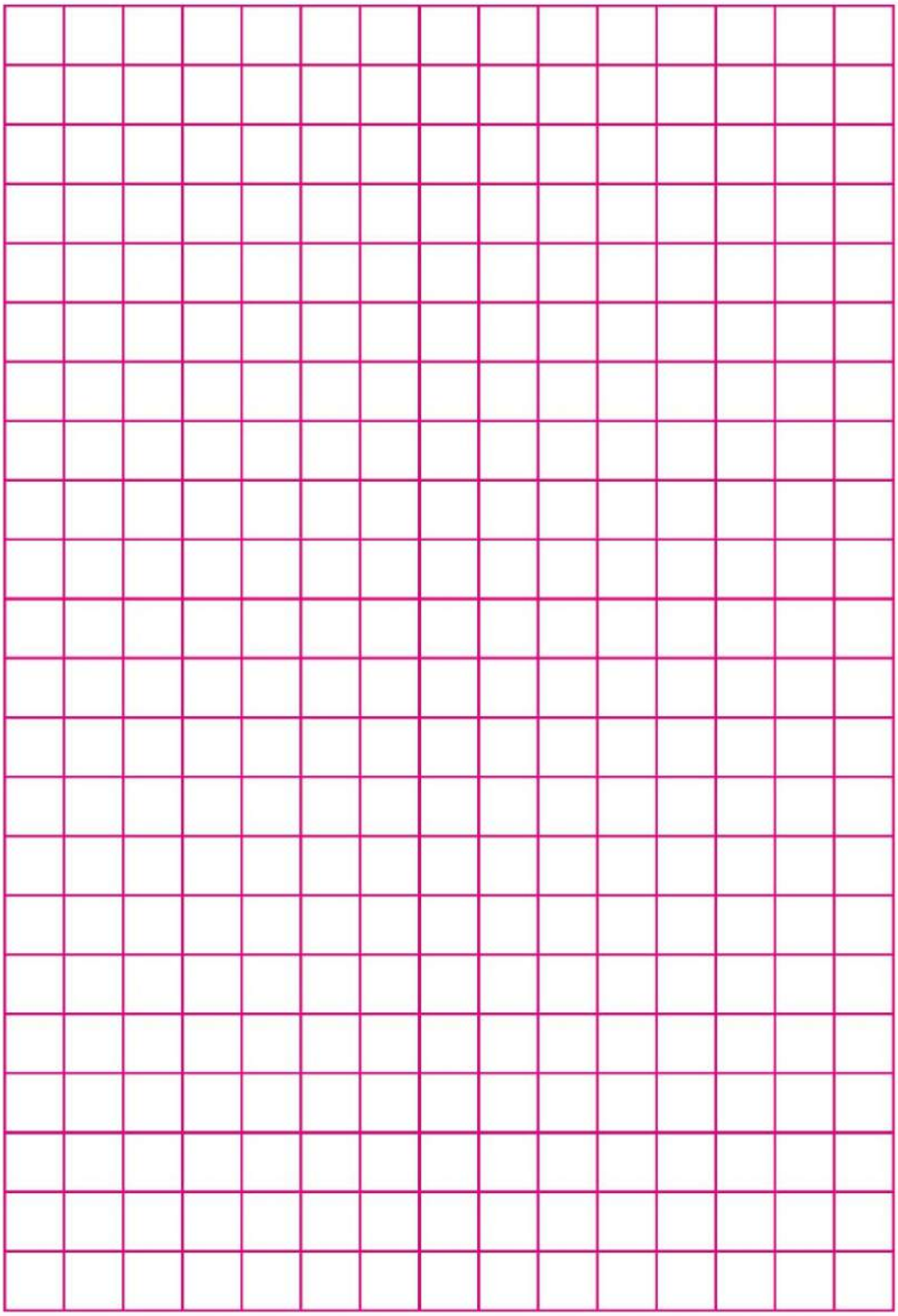
Exercise 17.2

(1) (i) Class VI (ii) Class 12 (iii) 30 (iv) Mean = 61
(2) 4.5 (3) 44 (4) 39
(5) (i) Millet - Rs. 6800, Guar - Rs. 8900, Groundnut - Rs. 9400 (ii) Groundnut
(6) 1 (7) 56 (8) 21 (9) (i) Range -5 (ii) 37°C (iii) 3 day
(10) (i) 34 (ii) 68.5 (iii) Suman (iv) 28

Exercise 17.3

(1) 6 (2) mean = 4 mode = 5
(3) median = 65, mode= 65 (4) 39
(5) (i) median - 151, mode - 151, 152
(ii) Yes, 151 and 152 are two modes
(6) mean - 44, median - 47, mode - 36,
(7) (i) True (ii) False (iii) False (iv) False


cm
inch




cm
1
2
3
4
5
6
Inch
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Great Mathematician Bhaskaracharya

Bhaskaracharya was born in 1114 AD on Vizzadveek. Some people indicated that this place belongs to Bijapur (Karnataka) where as some people believed that it belongs to Jalgaon (Maharashtra). There are three well known famous works of Bhaskaracharya on Astronomy and Mathematics.

Siddanta Shiromani : There are four major parts of this standard work on Astronomy -

(i) Lilavathi
(ii) Bijganitam
(iii) Grahganita
(iv) Golaadhyay

These four works are also considered as separate books. The importance of these can be seen from the fact that more than four thousand tikas are also available along with translation in various local and foreign languages.

Lilavathi

It contains 9 chapters and 261 shlokas. He emphasized the importance of women education by giving the name of his daughter to this work.

Bijganitam

It consists of 12 chapters and 213 shlokas as in which the operations of algebra had been described. In other two works, Sphere and spherical Trigonometry, Grahanganita and Panchangganita are included.

Contributions of Bhaskaracharya

1. The name "Khahar" given to a number obtained from a positive number after dividing by zero. "Kh" means zero therefore Khahar means the number whose denominator is zero.
2. The description of permutations and combination in Lilavathi had been given in Ankpash Section. Some triangles are given under the title of Khandmeru which are known as "Pascal Triangle".
3. The solution of quadratic equation of algebra 61 $x^2 + 1 = y^2$ and other similar equations had been obtained by Chakraval's method which could be solved after 500 years by the western mathematicians.
4. The stationary value and lowest value of π had been given by him respectively as $\frac{22}{7}$ and 3.1416.
5. He revealed the simple proof of Pythagoras theorem.
6. He gave the formulae to find volume of cylinder and cube in the Mensuration.
7. He described the method to make magic squares in his book. India named Bhaskar to a satellite due to his incredible contribution in the Mathematic and Astronomy.