Chapter - 7
Algebra

Exercise

In questions 1 to 23, out of the four given options, only one is correct. Write the correct answer

1. If each match box contains 50 matchsticks, the number of matchsticks required to fill n such boxes is

(A) 50 + n (B) 50n (C) 50÷ n (D) 50 – n

Solution:

As given information, 1 box = 50 matchsticks

This implies n box = $50 \times n$ matchsticks

So, option (B) is correct.

2. Amulya is x years of age now. 5 years ago her age was

(A) (5 – x) years (B) (5 + x) years (C) (x – 5) years (D) (5 ÷ x) years

Solution:

Present age of Amulya = x years

5 years ago her age = $(x-5)$ years

So, correct option is (C).

3. Which of the following represents 6 × x

(A) 6x (B) x/6 (C) 6 + x (D) 6 – x

Solution:

Here, $6 \times x$ is equivalent to 6x.

So, option (A) is correct.

4. Which of the following is an equation?

(A) x + 1 (B) x – 1 (C) x – 1 = 0 (D) x + 1 > 0

Solution:

Equation is always represented when 0 is on the right hand side.

So, option (C) is correct.

5. If x takes the value 2, then the value of x + 10 is

(A) 20 (B) 12 (C) 5 (D) 8

Solution:

If x= 2

Then x + 10 = 2 + 10

= 12

So, option (B) is correct.

6. If the perimeter of a regular hexagon is x metres, then the length of each of its sides is

(A) (x + 6) metres (B) (x ÷ 6) metres (C) (x – 6) metres (D) (6 ÷ x) metres

Solution:

Given perimeter of regular hexagon = x metres

No. of sides in hexagon = 6

This implies, length of each side of hexagon = $\frac{x}{6}$ meters

So, option (B) is correct.

7. Which of the following equations has x = 2 as a solution?

(A) x + 2 = 5 (B) x – 2 = 0 (C) 2x + 1 = 0 (D) x + 3 = 6

Solution:

Clearly we can see that if x = 2 in

$$x - 2 = 0$$

$$2-2 = 0$$

L.H.S = R.H.S

Which makes x = 2 as the solution of equation,

$x - 2 = 0$

So, option (B) is correct.

8. For any two integers x and y, which of the following suggests that operation of addition is commutative?

(A) x + y = y + x (B) x + y > x (C) x – y = y – x (D) x × y = y × x

Solution:

Let us assume a and b are the two integers,

Then, commutative law of addition = a + b = b + a

Where, a = x, b = y

Therefore, commutative law of addition = x + y = y + x

So, option (A) is correct.

9. Which of the following equations does not have a solution in integers?

(A) x + 1 = 1 (B) x – 1 = 3 (C) 2x + 1 = 6 (D) 1 – x = 5

Solution:

In equation 2x + 1 = 6,

$x = \frac{5}{2}$, which is not an integer.

So, option (C) is correct.

10. In algebra, a × b means ab, but in arithmetic 3 × 5 is

(A) 35 (B) 53 (C) 15 (D) 8

Solution:

In arithmetic 3 × 5 is given by 15.

So, option (C) is correct.

11. In algebra, letters may stand for

(A) known quantities (B) unknown quantities (C) fixed numbers (D) none of these

Solution:

In algebra, when a quantity is not known it is represented by using a letter.

So, option (B) is correct.

12. "Variable" means that it

(A) can take different values

(B) has a fixed value

(C) can take only 2 values

(D) can take only three values

Solution:

Variable refers to the one which can take many different values.

So, option (A) is correct.

13. 10 – x means

(A) 10 is subtracted x times

(B) x is subtracted 10 times

(C) x is subtracted from 10

(D) 10 is subtracted from x

Solution:

10 – x means that x is subtracted from the number 10.

So, correct option is (C).

14. Savitri has a sum of Rs x. She spent Rs 1000 on grocery, Rs 500 on clothes and Rs 400 on education, and received Rs 200 as a gift. How much money (in Rs) is left with her?

(A) x – 1700 (B) x – 1900 (C) x + 200 (D) x – 2100

Solution:

Savitri has a sum of Rs x

She spent money on grocery = ₹ 1000

She spent money on clothes = ₹ 500

She spent money on education = ₹ 400

She received gift = ₹ 200

Total money spent by Savitri = 1000 + 500 + 400 = ₹ 1900

Then,

Total money left with her after deducting = ₹ (x – 1900)

Therefore, money left with her after adding gift money = (x – 1900) + 200

= x – 1700

So, option (A) is correct.

15. The perimeter of the triangle shown in Fig. 7.1 is

(A) 2x + y (B) x + 2y (C) x + y (D) 2x – y

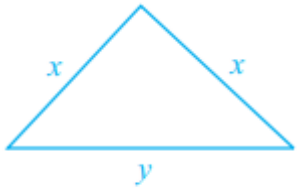

Fig. 7.1

Solution:

Perimeter of triangle given in figure is = x + x + y

= 2x + y

So, correct option is (A).

16. The area of a square having each side x is

(A) x × x (B) 4x (C) x + x (D) 4 + x

Solution:

Area of square having each side x = $(\text{Side})^2$

= $(x)^2$

= x × x

So, option (C) is correct.

17. The expression obtained when x is multipled by 2 and then subtracted from 3 is

(A) 2x – 3 (B) 2x + 3 (C) 3 – 2x (D) 3x – 2

Solution:

The expression obtained when x is multiplied by 2 and then subtracted from 3 is 3 – 2x.

So, option (C) is correct.

18. q/2 = 3 has a solution

(A) 6 (B) 8 (C) 3 (D) 2

Solution:

Here, $\frac{q}{2} = 3$

Hence, q = 6

So, option (A) is correct.

19. x – 4 = – 2 has a solution

(A) 6 (B) 2 (C) – 6 (D) – 2

Solution:

In x – 4 = – 2

x = – 2 + 4

= 2

So, option (B) is correct.

20. 4/2 = 2 denotes a

(A) numerical equation

(B) algebraic expression

(C) equation with a variable

(D) false statement

Solution:

4/2 = 2 denotes a numerical equation.

So, option (A) is correct.

21. Kanta has p pencils in her box. She puts q more pencils in the box. The total number of pencils with her are

(A) p + q (B) pq (C) p – q (D) p/q

Solution:

Total numbers of pencils with her are p + q respectively.

So, option (A) is correct.

22. The equation 4x = 16 is satisfied by the following value of x

(A) 4 (B) 2 (C) 12 (D) –12

Solution:

The equation 4x = 16 is satisfied by

$$x = \frac{16}{4}$$

$$x = 4$$

So, option (A) is correct.

23. I think of a number and on adding 13 to it, I get 27. The equation for this is

(A) x – 27 = 13 (B) x – 13 = 27 (C) x + 27 = 13 (D) x + 13 = 27

Solution:

If number is x and 13 is added to it to get 27, equation becomes

x + 13 = 27

So, option (D) is correct.

In question 24 to 40, fill in the blanks to make the statements true:

24. The distance (in km) travelled in h hours at a constant speed of 40km per hour is _____.

Solution:

In h hours, at a constant speed of 40km per hour distance travelled is $40 \times h$ km.

The distance (in km) travelled in h hours at a constant speed of 40km per hour is 40h km.

25. p kg of potatoes are bought for Rs 70. Cost of 1kg of potatoes (in Rs) is _____.

Solution:

If cost of p kg potatoes = Rs 70

Cost of 1 kg potatoes = $Rs\,\frac{70}{p}$

p kg of potatoes are bought for Rs 70. Cost of 1kg of potatoes (in Rs) is $Rs\,\frac{70}{p}$.

26. An auto rickshaw charges Rs 10 for the first kilometre then Rs 8 for each such subsequent kilometre. The total charge (in Rs) for d kilometres is _____.

Solution:

As per given information, if an auto rickshaw charges Rs 10 for the first kilometre then Rs 8 for each such subsequent kilometre, then

Total charge (in Rs) for d kilometres is = 10 + (d–1)8

= Rs 8d + 2

An auto rickshaw charges Rs 10 for the first kilometre then Rs 8 for each such subsequent kilometre. The total charge (in Rs) for d kilometres is Rs 8d + 2.

27. If 7x + 4 = 25, then the value of x is _____.

Solution:

If $7x + 4 = 25$ then,

$7x = 21$

$x = 3$

If $7x + 4 = 25$, then the value of x is 3.

28. The solution of the equation $3x + 7 = -20$ is _____.

Solution:

Given equation, $3x + 7 = -20$

This implies, $3x = -27$

$x = -9$

The solution of the equation $3x + 7 = -20$ is -9.

29. 'x exceeds y by 7' can be expressed as _____.

Solution:

'x exceeds y by 7' is given as $x - y = 7$.

'x exceeds y by 7' can be expressed as $x - y = 7$.

30. '8 more than three times the number x' can be written as _____.

Solution:

'8 more than three times the number x' is given as $3x + 8$.

'8 more than three times the number x' can be written as $3x + 8$.

31. Number of pencils bought for Rs x at the rate of Rs 2 per pencil is _____.

Solution:

As per given information, Rs 2 = 1 pencil

This implies, Rs x = $\frac{1}{2}x$ pencils

Number of pencils bought for Rs x at the rate of Rs 2 per pencil is $\frac{1}{2}x$ pencils .

32. The number of days in w weeks is _____.

Solution:

Number of days in 1 week = 7 days

This implies, number of days in w week = 7w days

The number of days in w weeks is 7w days.

33. Annual salary at r rupees per month along with a festival bonus of Rs 2000 is _____.

Solution:

As per given information, Annual salary at r rupees per month along with a festival bonus of Rs 2000 is 12r + 2000.

Annual salary at r rupees per month along with a festival bonus of Rs 2000 is 12r + 2000.

34. The two digit number whose ten's digit is 't' and units's digit is 'u' is _____.

Solution:

The two digit number whose ten's digit is 't' and units's digit is 'u' is tu.

35. The variable used in the equation 2p + 8 = 18 is _____.

Solution:

Variable are basically alphabetical letters which are used for representing unknown quantities.

The variable used in the equation 2p + 8 = 18 is p.

36. x metres = _____ centimetres

Solution:

Since 1 metres = 100 centimetres

This implies, x meters = 100x centimetres.

x metres = 100x centimetres.

37. p litres = _____ millilitres

Solution:

Since 1 litres = 1000 millilitres

This implies, p litres = 1000p millilitres.

p litres = 1000p millilitres

38. r rupees = _____ paise

Solution:

Since 1 rupees = 100 paise

This implies, r rupees = 100r paise

r rupees = 100r paise

39. If the present age of Ramandeep is n years, then her age after 7 years will be _____.

Solution:

Present age of Ramandeep = n years

After 7 years, Ramandeep's age = 7 + n years

If the present age of Ramandeep is n years, then her age after 7 years will be 7 + n years.

40. If I spend f rupees from 100 rupees, the money left with me is _____ rupees.

Solution:

If I spend f rupees from 100 rupees, the money left with me is 100– f rupees.

In question 41 to 55, state whether the statements are true or false.

41. 0 is a solution of the equation x + 1 = 0

Solution:

No, 0 is not the solution of the equation x + 1 = 0.

So, given statement is **False**.

42. The equations x + 1 = 0 and 2x + 2 = 0 have the same solution.

Solution:

Yes, the equations x + 1 = 0 and 2x + 2 = 0 have the same solution.

So, given statement is **True**.

43. If m is a whole number, then 2m denotes a multiple of 2.

Solution:

Yes, If m is a whole number, then 2m denotes a multiple of 2.

So, given statement is **True**.

44. The additive inverse of an integer x is 2x.

Solution:

No, additive inverse of an integer x is not 2x.

So, given statement is **False**.

45. If x is a negative integer, – x is a positive integer.

Solution:

Yes, If x is a negative integer, – x represents a positive integer.

So, given statement is **True**.

46. 2x – 5 > 11 is an equation.

Solution:

No, 2x – 5 > 11 is not an equation.

So, given statement is **False**.

47. In an equation, the LHS is equal to the RHS.

Solution:

No, not every time LHS is equal to the RHS in an equation.

So, given statement is **False**.

48. In the equation 7k – 7 = 7, the variable is 7.

Solution:

No, in the equation 7k – 7 = 7, the variable is k.

So, given statement is **False**.

49. a = 3 is a solution of the equation 2a – 1 = 5

Solution:

Yes, a = 3 is a solution of the equation 2a – 1 = 5.

So, given statement is **True**.

50. The distance between New Delhi and Bhopal is not a variable.

Solution:

Yes, the distance between New Delhi and Bhopal is not a variable.

So, given statement is **True**.

51. t minutes are equal to 60t seconds.

Solution:

Since 1 minute = 60 seconds

t minutes = 60t seconds

So, given statement is **True**.

52. x = 5 is the solution of the equation 3x + 2 = 20

Solution:

No, x = 5 is not the solution of the equation 3x + 2 = 20.

So, given statement is **False**.

53. 'One third of a number added to itself gives 8', can be expressed as x/3 + 8 = x

Solution:

No, 'One third of a number added to itself gives 8', can be expressed as x/3 + x = 8.

So, given statement is **False**.

54. The difference between the ages of two sisters Leela and Yamini is a variable.

Solution:

No, difference between the ages of two sisters Leela and Yamini is not a variable.

So, given statement is **False**.

55. The number of lines that can be drawn through a point is a variable.

Solution:

No, number of lines that can be drawn through a point is not a variable.

So, given statement is **False**.

In questions 56 to 74, choose a letter x, y, z, p etc...., wherever necessary, for the unknown (variable) and write the corresponding expressions:

56. One more than twice the number.

Solution:

Let the number be x.

So, ‘One more than twice the number’ can be expressed as = 2x + 1.

57. 20oC less than the present temperature.

Solution:

Let present temperature be x.

20° C less than the present temperature is expressed as = $(x - 20)^\circ$ C.

58. The successor of an integer.

Solution:

If an integer is x, its successor is expressed as x + 1.

59. The perimeter of an equilateral triangle, if side of the triangle is m.

Solution:

If side of an equilateral triangle is m, Perimeter of an equilateral triangle is

= m + m + m

= 3m

60. Area of the rectangle with length k units and breadth n units.

Solution:

If a rectangle has length k units and breadth n units, its area is given as = $(k \times n)$ squnit

61. Omar helps his mother 1 hour more than his sister does.

Solution:

Let Omar's sister helps his mother x hours, so Omar helps his mother 1 hour more than his sister does is expressed as x + 1.

62. Two consecutive odd integers.

Solution:

Let one odd integer be x.

So another consecutive odd integer will be x + 2.

Thus, Two consecutive odd integers are x, x + 2.

63. Two consecutive even integers.

Solution:

Let one even integer be x.

So another consecutive even integer will be x + 2.

Thus, Two consecutive even integers are x, x + 2.

64. Multiple of 5.

Solution:

If x is any whole number, 5x will be multiple of 5.

65. The denominator of a fraction is 1 more than its numerator.

Solution:

Let numerator and denominator of a fraction are x and y.

So if denominator of a fraction is 1 more than its numerator then it is expressed as: $y = 1 + x$.

66. The height of Mount Everest is 20 times the height of Empire State building.

Solution:

Let height of Mount Everest be x and height of Empire State building be y.

So, 'The height of Mount Everest is 20 times the height of Empire State building' is expressed as: $x = 20y$.

67. If a note book costs Rs p and a pencil costs Rs 3, then the total cost (in Rs) of two note books and one pencil.

Solution:

Cost of one note book = Rs p

Cost of one pencil = Rs 3

Total cost of two note books and one pencil = Rs $(2p + 3)$

68. z is multiplied by –3 and the result is subtracted from 13.

Solution:

If z is multiplied by –3 it is given as = $-3z$

Now when $-3z$ is subtracted from 13, it gives = $13-(-3z)$

$= 13 + 3z$

69. p is divided by 11 and the result is added to 10.

Solution:

If p is divided by 11, it is given as = $\frac{p}{11}$

Now when $\frac{p}{11}$ is added to 10, it gives = $\frac{p}{11}+10$

70. x times of 3 is added to the smallest natural number.

Solution:

x times of 3 is written as = 3x

Now, 3x is added to the smallest natural number which is 1and is written as

= 3x + 1.

71. 6 times q is subtracted from the smallest two digit number.

Solution:

6 times q is written as = 6q

Now, 6q is subtracted from the smallest two digit number which is 10 and is written as = 10 $-$6q.

72. Write two equations for which 2 is the solution.

Solution:

Two equations for which 2 is the solution are x $-$2 = 0 and x + 2 = 4.

73. Write an equation for which 0 is a solution.

Solution:

Equation for which 0 is a solution is x + 1 = 1.

74. Write an equation whose solution is not a whole number.

Solution:

Equation whose solution is not a whole number is $2x + 5 = 6$.

In questions 75 to 84, change the statements, converting expressions into statements in ordinary language:

75. A pencil costs Rs p and a pen costs Rs 5p.

Solution:

A pencil costs Rs p and a pen costs Rs 5p. In ordinary language it is given as, Cost of pen is 5 times the cost of pencil.

76. Leela contributed Rs y towards the Prime Minister's Relief Fund. Leela is now left with Rs (y + 10000).

Solution:

Leela contributed Rs y towards the Prime Minister's Relief Fund. Leela is now left with Rs (y + 10000). In ordinary language it is given as, After contributing Leela is left with 10000 more than the contributed amount.

77. Kartik is n years old. His father is 7n years old.

Solution:

Kartik is n years old. His father is 7n years old. In ordinary language it is given as, Kartik's father is 7 times older than Kartik.

78. The maximum temperature on a day in Delhi was p oC. The minimum temperature was (p – 10) °C.

Solution:

The maximum temperature on a day in Delhi was p °C. The minimum temperature was (p – 10) °C. In ordinary language is written as, On a day in Delhi the minimum temperature was 10 ° C less than the maximum temperature.

79. John planted t plants last year. His friend Jay planted 2t + 10 plants that year.

Solution:

John planted t plants last year. His friend Jay planted 2t + 10 plants that year. In ordinary language it is given as, Jay planted 10 more than twice the plants planted by John.

80. Sharad used to take p cups tea a day. After having some health problem, he takes p – 5 cups of tea a day.

Solution:

Sharad used to take p cups tea a day. After having some health problem, he takes p – 5 cups of tea a day. In ordinary language it is written as, After having some health problem Sharad consumes 5 cups less tea than he used to.

81. The number of students dropping out of school last year was m. Number of students dropping out of school this year is m – 30.

Solution:

The number of students dropping out of school last year was m. Number of students dropping out of school this year is m – 30. In ordinary language it is given as, Number of students dropping out of school this year 30 less than the ones dropped out last year.

82. Price of petrol was Rs p per litre last month. Price of petrol now is Rs (p – 5) per litre.

Solution:

Price of petrol was Rs p per litre last month. Price of petrol now is Rs (p – 5) per litre. In ordinary language it is given as, Price of petrol now is 5 litres less than the price of petrol last month.

83. Khader's monthly salary was Rs P in the year 2005. His salary in 2006 was Rs (P + 1000).

Solution:

Khader's monthly salary was Rs P in the year 2005. His salary in 2006 was Rs (P + 1000). In ordinary language it is given as, Khader's monthly salary in 2006 was Rs 1000 greater than the monthly salary in 2005.

84. The number of girls enrolled in a school last year was g. The number of girls enrolled this year in the school is 3g – 10.

Solution:

The number of girls enrolled in a school last year was g. The number of girls enrolled this year in the school is 3g – 10. In ordinary language, it is given as; The number of girls enrolled this year in the school is 10 less than three times the number of girls enrolled in a school last year.

85. Translate each of the following statements into an equation, using x as the variable:

(a) 13 subtracted from twice a number gives 3.

(b) One fifth of a number is 5 less than that number.

(c) Two-third of number is 12.

(d) 9 added to twice a number gives 13.

(e) 1 subtracted from one-third of a number gives 1.

Solution:

(a) 13 subtracted from twice a number gives 3, in equation form is expressed as $2x - 13 = 3$.

(b) One fifth of a number is 5 less than that number, in equation form is expressed as $x - 5 = \frac{x}{5}$.

(c) Two-third of number is 12, in equation from is expressed as $\frac{2}{3}x = 12$.

(d) 9 added to twice a number gives 13, in equation from is expressed as

$2x + 9 = 13$.

(e) 1 subtracted from one-third of a number gives 1, in equation from is expressed as $\frac{1}{3}x - 1 = 1$.

86. Translate each of the following statements into an equation:

(a) The perimeter (p) of an equilateral triangle is three times of its side (a).

(b) The diameter (d) of a circle is twice its radius (r).

(c) The selling price (s) of an item is equal to the sum of the cost price (c) of an item and the profit (p) earned.

(d) Amount (a) is equal to the sum of principal (p) and interest (i).

Solution:

(a) The perimeter (p) of an equilateral triangle is three times of its side (a), in equation from is expressed as $p = 3a$.

(b) The diameter (d) of a circle is twice its radius (r), in equation from is expressed as $d = 2r$.

(c) The selling price (s) of an item is equal to the sum of the cost price (c) of an item and the profit (p) earned, in equation from is expressed as $s = c + p$.

(d) Amount (a) is equal to the sum of principal (p) and interest (i), in equation from is expressed as a = p + (i).

87. Let Kanika's present age be x years. Complete the following table, showing ages of her relatives:

Situation (described in ordinary language)	**Expressions**
(i) Her brother is 2 years younger. **(ii) Her father's age exceeds her age by 35 years.** **(iii) Mother's age is 3 years less than that of her father.** **(iv) Her grandfather's age is 8 times of her age.**	_____ _____ _____ _____

Solution:

Completed table is as follows:

Situation (described in ordinary language)	Expressions
(i) Her brother is 2 years younger. (ii) Her father's age exceeds her age by 35 years. (iii) Mother's age is 3 years less than that of her father. (iv) Her grandfather's age is 8 times of her age.	x – 2 years x + 35 years x + 32 years 8x

88. If m is a whole number less than 5, complete the table and by inspection of the table, find the solution of the equation 2m – 5 = – 1 :

m					
2m-5					

Solution:

If m is a whole number less than 5, completed table is as follows:

M	0	1	2	3	4
2m-5	-5	-3	-1	1	3

Now as it can be seen in the table that as m = 2,

$2m-5=-1$.

So solution of $2m-5=-1$ is

m = 2.

89. A class with p students has planned a picnic. Rs 50 per student is collected, out of which Rs 1800 is paid in advance for transport. How much money is left with them to spend on other items?

Solution:

No. of students in a class = p

Per student fee collected = Rs 50

Money paid in advance = Rs 1800

Now money left = Rs $(50p-1800)$

90. In a village, there are 8 water tanks to collect rain water. On a particular day, x litres of rain water is collected per tank. If 100 litres of water was already there in one of the tanks, what is the total amount of water in the tanks on that day?

Solution:

No. of tanks available = 8

Water collected per tank = x litres

Amount of water in one of the tank = 100 litres

Total amount of available water in the tanks = (8x +100) litres

91. What is the area of a square whose side is m cm?

Solution:

Side of square = m cm

Area of square = side × side

= m × m sqcm

92. Perimeter of a triangle is found by using the formula P = a + b + c, where a, b and c are the sides of the triangle. Write the rule that is expressed by this formula in words.

Solution:

Rule P = a + b + c where a, b and c are the sides of the triangle in words is expressed as, Sum of all sides of a triangle is equal to its perimeter.

93. Perimeter of a rectangle is found by using the formula P = 2 (l + w), where l and w are respectively the length and breadth of the rectangle. Write the rule that is expressed by this formula in words.

Solution:

Rule P = 2 (l + w) which determines perimeter of a rectangle in words is expressed as, Perimeter of rectangle is equal to twice the sum of its length and breadth respectively.

94. On my last birthday, I weighed 40kg. If I put on m kg of weight after a year, what is my present weight?

Solution:

Weight on last birthday = 40 kg

Weight put on after a year = m kg

Present weight = (40 + m) kg

95. Length and breadth of a bulletin board are r cm and t cm, respectively.

(i) What will be the length (in cm) of the aluminium strip required to frame the board, if 10cm extra strip is required to fix it properly.

(ii) If x nails are used to repair one board, how many nails will be required to repair 15 such boards?

(iii) If 500sqcm extra cloth per board is required to cover the edges, what will be the total area of the cloth required to cover 8 such boards?

(iv) What will be the expenditure for making 23 boards, if the carpenter charges Rs x per board.

Solution:

(i) Length (in cm) of the aluminium strip required to frame the board, if 10cm extra strip is required to fix it properly is given as = (2(r + t) + 10) cm.

(ii) If x nails are used to repair one board, then no. of nails that will be required to repair 15 such boards = 15x nails.

(iii) Area of the cloth required to cover the board = $(r \times t)$ sqcm.

Extra cloth required to cover the edges of the board = 500 sqcm.

So total area of the cloth required to cover a single board = $(r \times t) + 500$ sqcm.

Now, total area of the cloth required to cover 8 such boards = $8((r \times t) + 500)$ sqcm.

(iv) Expenditure charges per board = Rs x

Expenditure charges for making 23 boards = Rs 23x

96. Sunita is half the age of her mother Geeta. Find their ages

(i) after 4 years? (ii) before 3 years?

Solution:

Given, Sunita is half the age of her mother Geeta.

Let ages of Sunita be x and her mother be y.

This implies, $x=\frac{1}{2}y$

(i) Age of Sunita after 4 years = x + 4

$= (\frac{1}{2}y + 4)$ years

Age of Sunita's mother after 4 years = y +4

= (2x + 4) years

(ii) Age of Sunita before 3 years = $x - 3$

$= (\frac{1}{2}y - 3)$ years

Age of Sunita's mother before 3 years = $y - 3$

$= (2x - 3)$ years

97. Match the items of Column I with that of Column II:

Column I	**Column II**
(i) The number of corners of a quadrilateral	**(A) =**
(ii) The variable in the equation 2p + 3 = 5	**(B) constant**
	(C) +1

(iii) The solution of the equation x + 2 = 3	**(D) -1**
(iv) solution of the equation 2p + 3 = 5	**(E) p**
(v) A sign used in an equation	**(F) x**

Solution:

(i) The number of corners of a quadrilateral in a variable quantity. So it could be denoted by any letter like x.

So, (i) match (F).

(ii) In equation 2p + 3 = 5, variable is p.

So (ii) match (E).

(iii) Solution of equation x + 2 = 3 is

x = + 1.

So (iii) match (C).

(iv) Solution of equation 2p + 3 = 5is

P = + 1.

So (iv) match (C).

(v) Equal is one of the sign used in equations.

So (v) match (A).

Matches are as follows:

(i)- (F)

(ii)-(E)

(iii)-(C)

(iv)-(C)

(v)-(A)