Access NCERT Solutions for Class 6 Chapter 11: Algebra Exercise 11.4

1. Answer the following:

(a) Take Sarita's present age to be y years

(i) What will be her age 5 years from now?

(ii) What was her age 3 years back?

(iii) Sarita's grandfather is 6 times her age. What is the age of her grandfather?

(iv) Grandmother is two year younger than grandfather. What is grandmother's age?

(v) Sarita's father's age is 5 years more than 3 times Sarita's age. What is her father's age?

(b) The length of a rectangular hall is 4 meters less than three times the breadth of the hall. What is the length, if the breadth is b meters?

(c) A rectangular box has height h cm. Its length is 5 times the height and breadth is 10 cm less than the length. Express the length and the breadth of the box in terms of the height.

(d) Meena, Beena and Reena are climbing the steps to the hill top. Meena is at step s, Beena is 8 steps ahead and Leena 7 steps behind. Where are Beena and Meena? The total number of steps to the hill top is 10 less than 4 times what Meena has reached. Express the total number of steps using s.

(e) A bus travels at v km per hour. It is going from Daspur to Beespur. After the bus has travelled 5 hours, Beespur is still 20 km away. What is the distance from Daspur to Beespur? Express it using v.

Solutions:

(a) (i) Sarita's age aftyer 5 years from now = Sarita's present age + 5

= (y + 5) years

(ii) Sarita's age 3 years back = Sarita's present age – 3

= (y – 3) years

(iii) Grandfather's age = 6 × Sarita's present age

= 6y years

(iv) Grandmother's age = granfather's present age – 2

= (6y -2) years

(v) Father's age = 5 + 3 × Sarita's present age

= (5 + 3y) years

(b) Length = 3 × Breadth – 4

l = (3b – 4) metres

(c) Length = 5 × Breadth

l = 5h cm

Breadth = 5 × length – 10

b = (5h – 10) cm

(d) The step at which Beena is = (step at which Meena is) + 8

= (s + 8)

The step at which Leena is = (step at which Meena is) – 7

= (s – 7)

Total steps = 4 × (step at which Meena is) – 10

= (4s – 10)

(e) Speed = v km / hr

Distance travelled in 5 hours = 5 × v

= 5v km

Total distance travelled between Daspur and Beespur = (5v + 20) km

2. Change the following statements using expressions into statements in ordinary language.

(For example, Given Salim scores r runs in a cricket match, Nalin scores (r + 15) runs. In ordinary language – Nalin scores 15 runs more than Salim.)

(a) A notebook costs □ p. A book costs □ 3p

(b) Tony put q marbles on the table. He has 8 q marbles in his box.

(c) Our class has n students. The school has 20 n students.

(d) Jaggu is z years old. His uncle is 4z years old and his aunt is (4z – 3) years old.

(e) In an arrangement of dots there are r rows. Each row contains 5 dots

Solutions:

(a) A book costs 3 times the costs of a notebook.

(b) Tony's box contains 8 times the number of marbles on the table

(c) Total number of students in the school is 20 times that of our class

(d) Jaggu's uncle is 4 times older than Jaggu and Jaggu's aunt is 3 years younger than his uncle

(e) The total number of dots is 5 times the number of rows

3. (a) Given Munnu's age to be x years, can you guess what (x – 2) may show?

Can you guess what (x + 4) may show? What (3x + 7) may show?

(b) Given Sara's age today to be y years. Think of her age in the future or in the past.

What will the following expression indicate? Y + 7, y – 3, $y+4\frac{1}{2}$**,** $y-2\frac{1}{2}$

(c) Given n students in the class like football, what may 2n shows? What may n / 2 show?

Solutions:

(a) (x – 2) represents the person whose age is (x – 2) years and he is 2 years younger to Munnu

(x + 4) represents the person whose age is (x + 4) years and he is 4 years elder than Munnu

(3x + 7) represents the person whose age is (3x + 7) years, elder to Munnu and his age is 7 years more than the three times of the age of Munnu

(b) In Future

After n years since now, Sara's age will be (y + n) years

In past

n years ago, Sara's age was (y – n) years

(y + 7) represents the person whose age is (y + 7) years and is 7 years elder to Sara

(y – 3) represents the person whose age is (y – 3) years and is 3 years younger to Sara

$y+4\frac{1}{2}$

represents the person whose age is $y+4\frac{1}{2}$ years and is $4\frac{1}{2}$years elder to Sara

$y-2\frac{1}{2}$represents the person whose age is $y-2\frac{1}{2}$ years and is $2\frac{1}{2}$years younger to Sara

(c) 2n shows the number of students who like either football or some other game like tennis whereas n / 2 shows the number of students who like tennis out of the total number of students who like football.