

(h)  $y$  is multiplied by  $-5$  and the result is  $\text{₹}$  added to  $16$ .

Ans:  $-5y + 16$

6.(a) Form expressions using  $t$  and  $4$ . Use not more than one number operation. Every expression must have  $t$  in it.

Soln: Expressions  $\rightarrow t+4, t-4, 4t, \frac{t}{4}, \frac{4}{t}, 4-t, 4+t$ .

Ex: 11.4

1. Answer the following:

(a) Take Savita'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) Savita's grandfather is 6 times her age. What is the age of her grandfather?

(iv) Grandmother is 2 years younger than grandfather. What is grandmother's age?

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

Soln:

(i)  $(y+5)$  years

(ii)  $(y-3)$  years

(iii)  $(6y)$  years

(iv)  $(6y-2)$  years

(v)  $(3y+5)$  years

(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.

Soln:

height =  $h$  cm

length =  $5h$  cm

Breadth =  $5h - 10$  cm

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

(a) A notebook costs  $\text{₹} p$ . A book costs  $\text{₹} 3p$ .

Soln: A book costs three times the cost of a notebook.

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

Soln: Jaggu's uncle is four times older than Jaggu and Jaggu's aunt is 3 years younger than his uncle.

Ex: 11.5

3. Pick out the solution from the values given in the bracket next to each equation. Show that the other values do not satisfy the equation.

(a)  $5m = 60$  ( $10, 5, 12, 15$ )

Soln:  $m = 10, 5 \times 10 = 60$   
 $50 \neq 60$

$$m=5, 5 \times 5 = 25 \neq 60$$

$$m=12, 5 \times 12 = 60$$

$$60 = 60$$

$$m=15, 5 \times 15 = 75 \neq 60$$

$$\therefore \text{Ans: } \boxed{m=12}$$

$$d) \frac{q}{2} = 7 \quad (7, 2, 10, 14)$$

Soln:

$$q=7, \frac{q}{2} = \frac{7}{2} = 3.5 \neq 7$$

$$q=2, \frac{q}{2} = \frac{2}{2} = 1 \neq 7$$

$$q=10, \frac{q}{2} = \frac{10}{2} = 5 \neq 7$$

$$q=14, \frac{q}{2} = \frac{14}{2} = 7 = 7$$

$$\text{Ans: } \boxed{q=14}$$

$$e) x-4=0 \quad (4, -4, 8, 0)$$

Soln:

$$x=4, x-4 = 4-4 = 0 = 0$$

$$x=-4, x-4 = -4-4 = -8 \neq 0$$

$$x=8, x-4 = 8-4 = 4 \neq 0$$

$$x=0, x-4 = 0-4 = -4 \neq 0$$

$$\text{Ans: } \boxed{x=4}$$

4) b) Complete the table and by inspection of the table, find the solution to the equation

$$5t = 35.$$

t	3	4	5	6	7	8	9	10	11	—	—
5t	—	—	—	—	—	—	—	—	—	—	—

Soln:

$$* 5t = 35$$

$$t=3,$$

$$5t = 5 \times 3 = 15 \neq 35$$

$$t=4, 5t = 5 \times 4 = 20 \neq 35$$

$$t=5, 5t = 5 \times 5 = 25 \neq 35$$

$$t=6, 5t = 5 \times 6 = 30 \neq 35$$

$$t=7, 5t = 5 \times 7 = \boxed{35} = 35$$

$$t=8, 5t = 5 \times 8 = 40 \neq 35$$

$$t=9, 5t = 5 \times 9 = 45 \neq 35$$

$$t=10, 5t = 5 \times 10 = 50 \neq 35$$

$$t=11, 5t = 5 \times 11 = 55 \neq 35.$$

t	3	4	5	6	7	8	9	10	11
5t	15	20	25	30	<b>35</b>	40	45	50	55

$$\text{Ans: } \boxed{t=7}$$

HOTS:

1. Pintu is 3 times as old as Chintu and Chintu is 5 years older than Jimmy. If Chintu is  $x$  years old, write in algebraic form:

(a) Pintu's age is 5 years from now.

\* Chintu's age  $\rightarrow x$

Pintu's age  $\rightarrow 3x$

Pintu's age 5 years from now  $\rightarrow (3x + 5)$

Ans  $\rightarrow (3x + 5)$  years.

(b) The sum of Pintu's and Chintu's ages 2 years from now.

\* Pintu's age  $\rightarrow 3x + 2$

Chintu's age  $\rightarrow x + 2$

Sum  $\rightarrow (3x + 2) + (x + 2)$

$\rightarrow 3x + 2 + x + 2$

$\rightarrow (4x + 4)$

Ans  $\rightarrow (4x + 4)$  years

(c) The sum of Chintu's and Jimmy's ages 4 years ago. ②

\* Chintu's age  $\rightarrow x - 4$

Jimmy's age  $\rightarrow (x - 5 - 4)$

Sum  $\rightarrow (x - 4) + (x - 5 - 4)$

$\rightarrow x - 4 + x - 5 - 4$

$\rightarrow (2x - 13)$

Ans  $\rightarrow (2x - 13)$  years

(d) Ruchika buys 5 copies for Maths,  $2x$  copies for English and  $y^2$  copies for Hindi. Express the total number of copies she buys as an algebraic expression.

\* Number of copies

Maths  $\rightarrow 5$

English  $\rightarrow 2x$

Hindi  $\rightarrow y^2$

Total  $\rightarrow 5 + 2x + y^2$

Ans Total no. of copies  $\rightarrow 5 + 2x + y^2$