

RD Sharma
Solutions

Class 7

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Exercise 8.4

Q.1 If 5 is subtracted from three times a number, the result is 16. Find the other.

Solution: Let the number be x

Now $3x - 5 = 16$

Transposing 5 to RHS

$$\Rightarrow 3x = 16 + 5$$

$$\Rightarrow 3x = 21$$

$$\Rightarrow x = \frac{21}{3} = 7 \Rightarrow$$

$\therefore$ required number = 7

Q.2 Find The number which when multiplied by 7 is increased by 18.

Solution: let the number be x

Now, $7x = x + 18$

Transposing x to LHS

$$\Rightarrow 7x - x = 18$$

$$\Rightarrow 6x = 18 \Rightarrow x = \frac{18}{6}$$

$$\Rightarrow x = 3$$

$\therefore$ required number is 3.

Q.3 Find three consecutive natural numbers such that the sum of first and second is 15 more than the third.

Solution: Let three consecutive natural numbers are x , $x+1$ and $x+2$

$$\text{Now, } x + x + 1 = x + 2 + 15$$

$$\Rightarrow 2x + 1 = x + 17$$

Transposing x to LHS, 1 to RHS

$$\Rightarrow 2x - x = 17 - 1$$

$$\Rightarrow x = 16$$

$\therefore$ required numbers are 16, 17, 18

Q4 The difference between two numbers is 7. Six times the smaller plus the larger is 77. Find the numbers.

Solution: Let the numbers be x and $x+7$.

$$\text{Now } 6x + (x+7) = 77$$

$$\Rightarrow 7x + 7 = 77$$

$$\Rightarrow 7x = 77 - 7$$

$$\Rightarrow 7x = 70 \Rightarrow x = \frac{70}{7} = 10$$

hence, other number $= x + 7 = 10 + 7 = 17$

Q.5 A man says "I am thinking of a number. When I divide it by 3 and then add 5, my answer is twice the number I thought of it. Find the number."

Solution: Let the number be x

Now, $\frac{x}{3} + 5 = 2x$

Transposing $2x$ to LHS and 5 to RH.

$$\Rightarrow \frac{x}{3} - 2x = -5$$

$$\Rightarrow \frac{x - 6x}{3} = \frac{-5}{1} \Rightarrow \frac{-5x}{3} = \frac{-5}{1}$$

$$\Rightarrow -5x = -15$$

$$\Rightarrow x = \frac{-15}{-5} = 3$$

$\therefore$ The number I thought is 3.

Q.6 If a number is tripled and the result is increased by 5, we get 50. Find the number.

Solution: Let the number be x

Now, $3x + 5 = 50$

$$\Rightarrow 3x = 50 - 5$$

$$\Rightarrow 3x = 45$$

$$\Rightarrow x = \frac{45}{3} = 15$$

Q.7 Shikha is 3 years younger to her brother Ravish. If the sum of their ages is 37 years, what are their present ages.

Solution! Let Present age of Ravish = x years.
Shikha's present age = $(x-3)$ yrs

Now, $x + x - 3 = 37$

$$\Rightarrow 2x - 3 = 37$$

$$\Rightarrow 2x = 37 + 3 = 40$$

$$\Rightarrow x = \frac{40}{2} = 20$$

$\therefore$ Present age of Ravish is 20 years

Present age of Shikha = $20 - 3$
= 17 years.

Q.8 Mrs. Jain is 27 years older than her daughter Nila. After 8 years she will be twice as old as Nila. Find their present ages.

Solution! Let Present age of Nila = x years.

$\therefore$ Present age of Mrs. Jain = $(x + 27)$ yrs.

After 8 years, age of Nila will be = $(x + 8)$ yrs.

age of Mrs. Jain will be = $(x + 27 + 8)$
= $(x + 35)$ yrs.

Now, $x + 35 = 2(x + 8)$

$$\Rightarrow x + 35 = 2x + 16$$

Transposing $2x$ to LHS, 35 to RHS

$$\Rightarrow x - 2x = 16 - 35$$

$$\Rightarrow -x = -19$$

$$\Rightarrow x = 19$$

$\therefore$ Present age of Nile = 19 yrs.

and Present age of Mrs Jain = $19 + 27 = 46$ years.

Q.9 A man is 4 times as old as his son. After 16 years, he will be only twice as old as his son. Find their present ages.

Solution: Let Present age of son = x years.
Present age of man = $4x$ years.

After 16 years, age of son will be = $(x + 16)$ yrs
age of man will be = $(4x + 16)$ yrs

Now $4x + 16 = 2(x + 16)$

$$\Rightarrow 4x + 16 = 2x + 32$$

$$\Rightarrow 4x - 2x = 32 - 16$$

$$\Rightarrow 2x = 16$$

$$\Rightarrow x = 8 \text{ yrs.}$$

$\therefore$ Present age of son = 8 yrs

Present age of man = $4 \times 8 = 32$ yrs.

Q.10 The difference in age between a girl and her younger sister is 4 yrs. The younger sister is turn 4 years older than her brother. The sum of the ages of the younger sister and her brother is 16. How old are the three children?

Solution: Let the age of girl = x years.

$\therefore$ age of her younger sister = $(x-4)$ years.

Thus, the age of the brother = $(x-4-4) = (x-8)$ yrs.

According to question:

$$(x-4) + (x-8) = 16$$

$$\Rightarrow x + x - 4 - 8 = 16$$

$$\Rightarrow 2x - 12 = 16$$

$$\Rightarrow 2x = 16 + 12 = 28$$

$$\Rightarrow x = \frac{28}{2} = 14 \text{ yrs.}$$

$\therefore$ Age of girl = 14 yrs.

Age of younger sister = $x - 4 = 14 - 4 = 10$ yrs.

Age of younger brother = $x - 8 = 14 - 8 = 6$ years

Q.11 one day, during their vacation at a beach resort, Shella found twice as many sea shells as Anita and Anita found 5 shells more than Sandy. Together Sandy and Shella found 16 sea shells. How many does each of them find?

Solution: Let the number of sea shells found by Sandy = x

So, the number of sea shells found by Anita = $(x+5)$
found by Shella = $2(x+5)$

Now $x + 2(x+5) = 16$

$$\Rightarrow x + 2x + 10 = 16$$

$$\Rightarrow 3x + 10 = 16$$

$$\Rightarrow 3x = 16 - 10 = 6$$

$$\Rightarrow x = \frac{6}{3} = 2$$

Thus, number of sea shells found by Sandy = $x = 2$

number of sea shells found by Anita = $x+5 = 2+5=7$

The number of sea shells found by Shella = $2(x+5)$
 $= 2(2+5) = 2(7) = 14$

Q.12 Andy has twice as many marbles as Pandy, and Sandy has half as many as Andy and Pandy put together. If Andy has 75 marbles more than

Sandy. Together Sandy and Shella found 16. see shells. How many did each of them find?

Solution: Let number of marbles Pandy has = x

So, the number of marbles Andy = $2x$

$$\begin{aligned} \text{Thus, the number of marbles with Sandy} \\ = \frac{x}{2} + \frac{2x}{2} = \frac{3x}{2} \end{aligned}$$

$$\text{Now, } 2x = \frac{3x}{2} + 75$$

$$\Rightarrow 2x - \frac{3x}{2} = 75$$

$$\Rightarrow \frac{4x - 3x}{2} = 75 \Rightarrow \frac{x}{2} = 75$$

$$\Rightarrow x = 75 \times 2 = 150$$

$\therefore$ Pandy has = 150 Marbles.

Andy has $2x = 2(150) = 300$ marbles.

Sandy has = $\frac{3x}{2} = \frac{3 \times 150}{2} = 225$ Marbles.

Q.13 A bag Contains 25 Paise and 50 Paise Coins

whose total value is Rs. 30. If the number of 25 paise coins is four times that of 50 paise coins.

Find the number of each type of coins.