Percentage
Exercise 10C

Q1

Answer :

(b) 75%

$$\frac{3}{4} = \left(\frac{3}{4} \times 100\right)\% = 75\%$$

Q2

Answer :

(c) 40%

$$2 : 5 = \frac{2}{5} = \left(\frac{2}{5} \times 100\right)\% = 40\%$$

Q3

Answer :

(c) $\frac{1}{12}$

$$8\frac{1}{3}\% = \frac{25}{3}\% = \left(\frac{25}{3} \times \frac{1}{100}\right) = \left(\frac{1}{3 \times 4}\right) = \frac{1}{12}$$

Q4

Answer :

(c) 12
We have $x\%$ of 75 = 9
$$\Rightarrow \left(\frac{x}{100} \times 75\right) = 9$$
$$\therefore x = \left(\frac{9 \times 100}{75}\right) = 12$$
Hence, the value of x is 12

Q5

Answer :

(d) 10%

Let x be the required percent.

Then, x % of $\frac{2}{7} = \frac{1}{35}$

$\Rightarrow \left(\frac{x}{100} \times \frac{2}{7} \right) = \frac{1}{35}$

$\therefore x = \left(\frac{100 \times 7}{35 \times 2} \right) = 10$

Hence, 10% of $\frac{2}{7}$ is $\frac{1}{35}$

Q6

Answer :

(b) 2.5%

Let x % of 1 day be 36 min.

Then, $\left(\frac{x}{100} \times 1 \times 24 \times 60 \right)$ min = 36 min

$\therefore x = \left(\frac{36 \times 100}{24 \times 60} \right) = \left(\frac{3 \times 5}{2 \times 3} \right)\% = \left(\frac{5}{2} \right)\% = \mathbf{2.5\%}$

Hence, 2.5% of 1 day is 36 min.

Q7

Answer :

(a) 35

Let the required number be x.

Then, $x + 20\%$ of $x = 42$

$\Rightarrow \left(x + \frac{20x}{100} \right) = 42$

$\Rightarrow \left(x + \frac{x}{5} \right) = 42$

$\Rightarrow \left(\frac{5x + x}{5} \right) = 42$ [∵ LCM of 1 and 5 = 5]

$\Rightarrow \left(\frac{6x}{5} \right) = 42$

$\therefore x = \left(\frac{42 \times 5}{6} \right) = 35$

Hence, the required number is 35.

Q8

Answer :

(b) 75

Let the required number be x.

Then, $x - 8\%$ of $x = 69$

$\Rightarrow \left(x - \frac{8x}{100} \right) = 69$

$\Rightarrow \left(x - \frac{2x}{25} \right) = 69$

$\Rightarrow \left(\frac{25x - 2x}{25} \right) = 69$ [Since L.C.M. of 1 and 25 = 25]

$\Rightarrow \left(\frac{23x}{25} \right) = 69$

$\therefore x = \left(\frac{69 \times 25}{23} \right) = 75$

Hence, the required number is 75

Q9

Answer :

(d) 8 kg

Let x kg be the required amount of ore.

Then, 5% of x kg = 400 g = 0.4 kg   [∵ 1 kg = 1000 g]

$\Rightarrow \left(\frac{5}{100} \times x \right) = 0.4$

$\Rightarrow x = \left(\frac{0.4 \times 100}{5} \right) = 8$

Hence, 8 kg of ore is required to obtain 400 g of copper.

Q10

Answer :

(b) Rs. 20000

Suppose that the gross value of the TV is Rs x.

Commission on the TV = 10%

Price of the TV after deducting the commission = Rs (x – 10% of x)

$$= \text{Rs} \left(x - \frac{10}{100}x\right) = \text{Rs} \left(\frac{100x - 10x}{100}\right) = \text{Rs} \left(\frac{9x}{10}\right)$$

However, price of the TV after deducting the commission = Rs 18000

Then, Rs $\left(\frac{9x}{10}\right)$ = Rs 18000

$\therefore x = \left(\frac{18000 \times 10}{9}\right)$ = Rs (2000 × 10) = Rs 20000

Hence, the gross value of the TV is Rs 20,000

Q11

Answer :

(b) Rs. 16000

Let us assume that the original salary of the man is Rs x.

Increase in it = 25%

Value increased in the salary = 25% of Rs. x

$$= \text{Rs} \left(\frac{25}{100} \times x\right) = \text{Rs} \left(\frac{x}{4}\right)$$

Salary after increment= Rs $\left(x + \frac{x}{4}\right)$ = Rs $\left(\frac{5x}{4}\right)$

However, increased salary = Rs 20000

Then, Rs $\left(\frac{5x}{4}\right)$ = Rs 20000

$\therefore x$ = Rs $\left(\frac{20000 \times 4}{5}\right)$ = Rs 16000

Hence, the original salary of the man is Rs 16,000

Q12

Answer :

(c) 560

Suppose that the number of examinees is 100.

Number of passed examinees = 95

Number of failed examinees = (100 – 95) = 5

Total number of examinees if 5 of them failed = 100

Total number of examinees if 28 of them failed = $\left(\frac{100}{5} \times 28\right) = (20 \times 28) = 560$

Hence, there were 560 examinees.

Q13

Answer :

(c) 700

Suppose that the fruit seller initially had 100 apples.

Number of apples sold = 40

$\therefore$ Number of remaining apples = (100 – 40) = 60

Initial number of apples if 60 of them are remaining = 100

Initial number of apples if 420 of them are remaining = $\left(\frac{100}{60} \times 420\right)$ = 700

Hence, the fruit seller originally had 700 apples with him.

Q14

Answer :

(c) Rs. 25250

Present value of the machine = Rs 25000

Decrease in its value after 1 year = 10% of Rs 25000

$$= \text{Rs} \left(\frac{10}{100} \times 25000\right) = \text{Rs} \ 2500$$

Depreciated value after 1 year = Rs (25000 – 2500) = Rs 22500

Hence, the value of the machine after 1 year will be Rs 22500

Q15

Answer:

(c) 75

Let the required number be x. Then, we have:

8% of x = 6

$\Rightarrow \left(\frac{8}{100} \times x \right) = 6$

$\therefore x = \left(\frac{6 \times 100}{8} \right) = 75$

Hence, the required number is 75

Q16
Answer:

(c) 270

60% of $450 = \left(\frac{60}{100} \times 450 \right)$

$\qquad\qquad = \left(\frac{3}{5} \times 450 \right) = (3 \times 90) = 270$

Q17
Answer:

(d) Rs. 700

Let us assume that the original price of the chair is Rs x.

Reduce percentage on the chair = 6%

So, value of reduction on the chair = 6% of Rs. x

$\qquad\qquad\qquad = \text{Rs} \left(\frac{6}{100} \times x \right) = \text{Rs} \left(\frac{3x}{50} \right)$

Reduced price of the chair = Rs $\left(x - \frac{3x}{50} \right)$

$\qquad\qquad\qquad = \text{Rs} \left(\frac{50x - 3x}{50} \right) = \text{Rs} \left(\frac{47x}{50} \right)$

However, present price of the chair = Rs 658

Then, Rs $\left(\frac{47x}{50} \right)$ = Rs 658

$\Rightarrow$ Rs $\left(\frac{47x}{50} \right)$ = Rs 658

$\Rightarrow x = \text{Rs} \left(\frac{658 \times 50}{47} \right) = \text{Rs}\,(14 \times 50) = 700$

Hence, the original price of the chair is Rs 700

Q18
Answer:

(b) 560

Let the total number of students be 100.

Then, number of boys = 70

$\therefore$ Number of girls = (100 − 70) = 30

Now, total number of students if there are 30 girls = 100

Total number of students if there are 240 girls = $\left(\frac{100}{30} \times 240 \right) = 800$

$\therefore$ Number of boys = (800 − 240) = 560

Hence, there are 560 boys in the school.

Q19
Answer:

(c) 450

Let x be the number.

(11% of x) − (7% of x) = 18

$\Rightarrow \left(\frac{11x}{100} - \frac{7x}{100} \right) = 18$

$\Rightarrow \frac{4x}{100} = 18$

$\therefore x = \left(\frac{18 \times 100}{4} \right) = (18 \times 25) = 450$

Hence, the required number is 450

Q20

Answer :

(a) 60

Let x be the number.

According to question, we have:

(35% of x) + 39 = x

$\Rightarrow \left(\frac{35}{100} \times x\right) + 39 = x$

$\Rightarrow \left(\frac{7x}{20}\right) + 39 = x$

$\Rightarrow \left(x - \frac{7x}{20}\right) = 39$

$\Rightarrow \left(\frac{20x-7x}{20}\right) = 39$

$\Rightarrow \left(\frac{13x}{20}\right) = 39$

$\therefore x = \left(\frac{39 \times 20}{13}\right) = 60$

Hence, the required number is 60

Q21

Answer :

(c) 500

Let x be the maximum marks.

Pass marks = (145 + 35) = 180

$\therefore$ 36% of x = 180

$\Rightarrow \left(\frac{36}{100} \times x\right) = 180$

$\Rightarrow x = \left(\frac{180 \times 100}{36}\right) = (5 \times 100) = 500$

Hence, maximum marks = 500

Q22

Answer :

(d) 225

Let x be the number.

According to question, we have:

x − 40% of x = 135

$\Rightarrow \left(x - \frac{40x}{100}\right) = 135$

$\Rightarrow \left(\frac{100x - 40x}{100}\right) = 135$

$\Rightarrow \left(\frac{60x}{100}\right) = 135$

$\Rightarrow x = \left(\frac{135 \times 100}{60}\right) = 225$

Hence, the required number is 225