Percentage
Ex 9B

Q1.

Answer :

(d) 60%

$\frac{3}{5} = \left(\frac{3}{5} \times 100\right)\%$
$= 60\%$

Q2.

Q3.

Answer :

(c) 120%
$6 : 5 = \frac{6}{5}$
$= \left(\frac{6}{5} \times 100\right)\%$
$= 120\%$

Q4.

Answer :

(d) 180

Let x be the required number. Then, we have :
$5\%\ of\ x = 9$
$\Rightarrow \left(x \times \frac{5}{100}\right) = 9$
$\Rightarrow \frac{5x}{100} = 9$
$\Rightarrow x = \left(9 \times \frac{100}{5}\right)$
$\Rightarrow x = 180$

Q5.

Answer :

(c) $133\frac{1}{3}\%$

Required percentage $= \left(\frac{120}{90} \times 100\right)\%$

$= 133\frac{1}{3}\%$

Q6.

Answer :

(d) 2.5%

Required percentage $= \left(\frac{250}{(10\times1000)} \times 100\right)\% = 2.5\%$

Q7

Answer :

(b) 600

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

$40\%\ of\ x = 240$

$\Rightarrow \left(x \times \frac{40}{100}\right) = 240$

$\Rightarrow \frac{40x}{100} = 240$

$\Rightarrow x = \left(240 \times \frac{100}{40}\right)$

$\Rightarrow x = 600$

Q8

Answer :

(c) 15

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

$x\%\ of\ 400 = 60$

$\Rightarrow \left(400 \times \frac{x}{100}\right) = 60$

$\Rightarrow \frac{400x}{100} = 60$

$\Rightarrow 4x = 60$

$\Rightarrow x = \frac{60}{4}$

$\Rightarrow x = 15$

Q9

Answer :

(d) 560

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

$(180\%\ of\ x) \div 2 = 504$

$\Rightarrow \left(x \times \frac{180}{100}\right) \div 2 = 504$

$\Rightarrow \left(\frac{180x}{100}\right) \div 2 = 504$

$\Rightarrow \left(\frac{180x}{100} \times \frac{1}{2}\right) = 504$

$\Rightarrow \frac{9x}{10} = 504$

$\Rightarrow x = \left(504 \times \frac{10}{9}\right)$

$\Rightarrow x = 560$

Q10

Answer :

(a) Rs 160

$20\%\ \ of\ \ Rs\ \ 800 = Rs\ \ \left(800 \times \frac{20}{100}\right)$

$= Rs\ \ 160$

Q11

Answer :

(c) 175

Let the maximum marks be x. Then, we have :

$56\%\ of\ x = \left(x \times \frac{56}{100}\right)$

$= \frac{56x}{100}$

Now, $\frac{56x}{100} = 98$

$\Rightarrow x = \left(98 \times \frac{100}{56}\right)$

$\Rightarrow x = 175$

Q12.

Answer :

(b) decrease by 1 %

Let x **be the number.**

A 10% **increase will give a new number,** $\frac{110}{100}x = \frac{11}{10}x$

The number is then reduced by 10%**.**

The new number will be $\frac{90}{100}\left(\frac{11}{10}\text{x}\right) = \frac{990}{1000}x = \frac{99}{100}x$

Difference $= \text{x} - \frac{99}{100}\text{x} = \frac{1}{100}\text{x}$

Percentage of decrease $= \frac{1}{100}x \times \frac{1}{\text{x}} \times 100 = 1\%$

Q13.

Answer :

(a) $18\frac{3}{4}\%$

$4\ h\ 30\ min = (4 \times 60 \times 60) + (30 \times 60)$

$= 16200\ sec$

$24\ h = (24 \times 60 \times 60)$

$= 86400\ sec$

Now, $\left(\frac{16200}{86400} \times 100\right)\% = 18\frac{3}{4}\%$

Q14.

Answer :

(c) 1200

Let x **be the total number of examinees.**

Percentage of the examinees passed $= 65\%$

Percentage of the examinees failed $= 35\%$

Number of the examinees failed $= (35\%\ \text{of x})$

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

$= \frac{35x}{100}$

Now, $\frac{35\text{x}}{100} = 420$

$\Rightarrow x = \left(420 \times \frac{100}{35}\right)$

$\Rightarrow x = 1200$

Q15.

Answer :

(a) 50

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

$20\%\ of\ x + 40 = x$

$\Rightarrow \left(x \times \frac{20}{100}\right) + 40 = x$

$\Rightarrow \frac{20x}{100} + 40 = x$

$\Rightarrow \left(\frac{20x}{100} - x\right) = -40$

$\Rightarrow \frac{-80x}{100} = -40$

$\Rightarrow x = \left(40 \times \frac{100}{80}\right)$

$\Rightarrow x = 50$

Q16.

Answer :

(c) 120

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

$$x - \left(27\frac{1}{2}\% \text{ of } x\right) = 87$$
$$\Rightarrow x - \left(\frac{55}{2}\% \text{ of } x\right) = 87$$
$$\Rightarrow x - \left(x \times \frac{55}{2} \times \frac{1}{100}\right) = 87$$
$$\Rightarrow x - \frac{11x}{40} = 87$$
$$\Rightarrow \frac{29x}{40} = 87$$
$$\Rightarrow x = \left(87 \times \frac{40}{29}\right)$$
$$\Rightarrow x = 120$$

Q17.

Answer :

(c) 0.25%

Required percentage $= \left(\frac{0.05}{20} \times 100\right)\% = 0.25\%$

Q18.

Answer :

(d) 300%

Required percentage $= \left(\frac{1206}{3} \times \frac{1}{134} \times 100\right)\% = 300\%$

Q19.

Answer :

(a) *x*

Let the required number be z**. Then, we have :**

$$x\% \text{ of } y = y\% \text{ of } z$$
$$\Rightarrow \left(y \times \frac{x}{100}\right) = \left(z \times \frac{y}{100}\right)$$
$$\Rightarrow \frac{yx}{100} = \frac{zy}{100}$$
$$\Rightarrow z = \left(\frac{yx}{100} \times \frac{100}{y}\right)$$
$$\Rightarrow z = x$$

Q20.

Answer :

(a) *x*

Required percentage $= \left(\frac{1}{35} \times \frac{7}{2} \times 100\right)\% = 10\%$