

EXERCISE 7A**Question 1****Evaluate:**

(i) 55% of 160 + 24% of 50 – 36% of 150

Solution:

$$\begin{aligned} \text{Equating them in the following form} &= \frac{55 \times 160}{100} + \frac{24 \times 50}{100} - \frac{36 \times 150}{100} \\ &= 11 \times 8 + 12 - 18 \times 3 = 88 + 12 - 54 = 46 \end{aligned}$$

(ii) 9.3% of 500 – 4.8% of 250 – 2.5% of 240

Solution:

Equating them in the following form

$$\begin{aligned} &= \frac{9.3 \times 500}{100} - \frac{4.8 \times 250}{100} - \frac{2.5 \times 240}{100} \\ &= 9.3 \times 5 - 1.2 \times 10 - 0.5 \times 12 \\ &= 46.5 - 12 - 6 = 46.5 - 18 = 28.5 \end{aligned}$$

Question 2.

(i) A number is increased from 125 to 150; find the percentage increase.

Solution:

Original value = 125

New value = 150

Increase = (150 - 125) = 25

Increase % = $\frac{25}{125} \times 100 = 20\%$

(ii) A number is decreased from 125 to 100; find the percentage decrease.

Solution:

Original value = 125,

New value = 100

Decrease = (125 - 100) = 25

Decrease % = $\frac{25}{125} \times 100 = 20\%$ **Question 3.**

Find:

(i) 45 is what percent of 54?

Solution:

Let $45 = x$ percent of $54 = \frac{54 \times x}{100} \Rightarrow x = \frac{45 \times 100}{54} = \frac{5 \times 100}{6} = \frac{250}{3} = 83\frac{1}{3}\%$
 \therefore Required percentage $= 83\frac{1}{3}\%$

Find (ii) 2.7 is what percent of 18?

Solution:

Let $2.7 = x$ percent of $18 = \frac{18 \times x}{100} \therefore x = \frac{2.7 \times 100}{18} = \frac{270}{18} = \frac{30}{2} = 15$
 \therefore Required percentage $= 15\%$

Question 4.

(i) 252 is 35% of a certain number, find the number.

Solution:

(i) Let the number be x

By the given condition

$$252 = \frac{x \times 35}{100} = \frac{x \times 7}{20} \therefore x = \frac{252 \times 20}{7} = 36 \times 20 = 720$$

Hence, the required number $= 720$

(ii) If 14% of a number is 315; find the number.

Solution:

Let the number be x

By the given condition

$$315 = \frac{x \times 14}{100} \therefore x = \frac{315 \times 100}{14} = \frac{45 \times 100}{2} = 45 \times 50 = 2250$$

Hence the required number $= 2250$.

Question 5.

Find the percentage change, when a number is changed from:

(i) 80 to 100

Solution:

Original number $= 80$

New number $= 100$,

Change $= (100 - 80) = 20$

\therefore Percentage change (increase)

$$= \frac{20}{80} \times 100 = 25\%$$

(ii) 100 to 80

Solution:

Original number = 100

New number = 80

Change $(100 - 80) = 20$

\therefore Percentage change (decrease) $= \frac{20}{100} \times 100 = 20\%$

(iii) 6.25 to 7.50

Solution:

Original number = 6.25

New number = 7.50

Change (increase) $= (7.50 - 6.25) = 1.25$

\therefore Increase $= \frac{1.25}{6.25} \times 100 = 20\%$

Question 6.

An auctioneer charges 8% for selling a house. If a house is sold for Rs.2,30,500; find the charges of the auctioneer.

Solution:

Selling price of the house = Rs.2,30,500

Rate of charges of the auctioneer = 8% of selling price

\therefore Charges of the auctioneer = 8% of 2,30,500,

$= \frac{8}{100} \times 2,30,500 = \text{Rs.}18,440$

Question 7.

Out of 800 oranges, 50 are rotten. Find the percentage of good oranges.

Solution:

Rotten oranges = 50

Number of good oranges = $800 - 50 = 750$

Percentage of good oranges $= \frac{750}{800} \times 100 = \frac{750}{8} = 375/4 = 93\frac{3}{4}\%$

Question 8.

A cistern contains 5 thousand litres of water. If 6% water is leaked. Find how many litres of water are left in the cistern.

Solution:

Water in the cistern = 5000 litres

Quantity of water leaked $= \frac{6}{100} \times 5000 = 300$ litres

Quantity of water left in the cistern

= (5000 – 300) litres = 4700 litres

Question 9.

A man spends 87% of his salary. If he saves Rs. 325; find his salary.

Solution:

Let salary =Rs x

∴ Expenditure = $\frac{87}{100}$ of x =Rs $\cdot\frac{87x}{100}$

Saving =Rs.325

$$x - \frac{87x}{100} = 325 \quad \frac{100x - 87x}{100} = 325 \Rightarrow \frac{13x}{100} = 325 \quad x = \frac{325 \times 100}{13} \Rightarrow x = \frac{32500}{13}$$

x=2500

∴ Salary =Rs.2500

Question 10.

(i) A number 3.625 is wrongly read as 3.265; find the percentage error.

Solution:

Correct number =3.625

Number wrongly read as =3.265

Error =3.625-3.265=0.360

% Error = $\frac{0.360}{3.625} \times 100 = \frac{360}{3625} \times 100 = \frac{36000}{3625} = 9.93\%$

(ii) A number 5.78×10^3 is wrongly written as 5.87×10^3 , find the percentage e

Solution:

Correct number = 5.78×10^3

Number wrongly written as = 5.87×10^3

Error= $5.87 \times 10^3 - 5.78 \times 10^3 = 0.09 \times 10^3$

% Error = $\frac{0.09 \times 10^3}{5.78 \times 10^3} \times 100 = \frac{0.09}{5.78} \times 100 = \frac{95}{78} \times 100 = \frac{900}{578}\%$
=1.56%

Question 11.

In an election between two candidates, one candidate secured 58% of the votes polled and won the election by 18,336 votes. Find the total number of votes polled and the votes secured by each candidate.

Solution:

Since, winning candidate secured 58% of the votes polled.

∴ Losing candidate secured = (100-58)% of the votes polled = 42% of the votes polled

Difference of votes =58-42 =16% of the votes polled

We are given:

16% of votes polled = 18,336

$\frac{16}{100}$ of votes polled = 18,336

\Rightarrow Votes polled = $18,336 \times \frac{100}{16}$

\Rightarrow Votes polled = $18,33,600/16$

\Rightarrow Votes polled = 1,14,600

\therefore Votes secured by winning candidate

= $\frac{58}{100} \times 1,14,600 = 66,468$

Votes secured by losing candidate

= $\frac{42}{100} \times 1,14,600 = 48,132$

Votes polled = 1,14,600

Votes secured by winning candidate = 66,468

Votes secured by losing candidate = 48,132

Question 12.

In an election between two candidates one candidate secured 47% of votes polled and lost the election by 12,366 votes. Find the total votes and the votes secured by the winning candidate.

Solution:

Since, the losing candidate secured 47% of the votes polled

Winning candidate secures votes = $(100-47)\%$ of the votes polled

= 53 % of the votes polled

Difference of votes = $53-47 = 6\%$ of the votes polled

We are given:

6% of the votes polled = 12,366

$\frac{6}{100}$ of the votes polled = 12,366

Votes polled = $12,366 \times \frac{100}{6} = 1236600/6 = 2,06,100$

Votes secured by winning candidate

= $\frac{53}{100} \times 2,06,100 = 1,09,233$

\therefore Votes polled = 2,06,100

Votes secured by winning candidate = 1,09,233

Question 13.

The cost of a scooter depreciates every year by 15% of its value at the beginning of the year. If the present cost of the scooter is 8,000; find its cost:

(i) After one year

(ii) After 2 years

Solution:

Present cost of scooter = Rs.8000

The cost of scooter depreciates by 15% every year

(i) Cost of scooter after one year

$$= \frac{(100-15)}{100} \times 8000 = \frac{85}{100} \times 8000 = \text{Rs.}6800$$

(ii) Cost of scooter after 2 year

$$= \frac{(100-15)}{100} \times 6800 = \frac{85}{100} \times 6800 = \text{Rs.} 5780$$

Question 14.

In an examination, the pass mark is 40%. If a candidate gets 65 marks and fails by 3 marks; find the maximum marks.

Solution:

Marks obtained by the candidate =65

Fails by = 3 marks

Pass marks = 65 + 3 = 68

% of Pass marks = 40 %

$$\therefore \text{Required maximum marks} = \frac{100}{40} \times 68 = 10 \times 17 \\ = 170$$

Question 15.

In an examination, a candidate secured 125 marks and failed by 15 marks. If the pass percentage was 35%. Find the maximum marks.

Solution:

Total marks secured = 125

Failed by 15 marks

$$\therefore \text{Pass marks} = 125 + 15 = 140$$

Let maximum marks = x

$$\frac{x \times 35}{100} = 140 \Rightarrow x = \frac{140 \times 100}{35} = 4 \times 100 = 400$$

Hence maximum marks = 400