EXERCISE 7A

Question 1

Evaluate:

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

Solution:

Equating them in the following form $= \frac{55\times160}{100} + \frac{24\times50}{100} - \frac{36\times150}{100}$

$=11\times8+12-18\times3=88+12-54=46$

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

Solution:

Equating them in the following form

$= \frac{9.3\times500}{100} - \frac{4.8\times250}{100} - \frac{2.5\times240}{100}$

$=9.3\times5-1.2\times10-0.5\times12$

=46.5-12-6=46.5-18=28.5

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 $\%=25/125\times100=20\%$

(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 $\%=25/125\times100=20\%$

Question 3.

Find:

(i) 45 is what percent of 54?

Solution:

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

∴ Required percentage=$83_{1/3}\%$

Find (ii) 2.7 is what percent of 18?

Solution:

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

∴ 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

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

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

∴ Percentage change (increase)

$=_{20/80} \times 100 = 25\%$
(ii) 100 to 80

Solution:

Original number = 100

New number = 80

Change (100 – 80) = 20

∴ 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

∴ 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

∴ Charges of the auctioneer = 8% of 2,30,500,

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

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 $=\frac{750}{800}\times 100=\frac{750}{8}=\frac{375}{4}=93\frac{3}{4}\%$

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 $=\frac{6}{100}\times 500=300 litres$

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 $=87/100$ of x $=Rs\cdot 87x/100$
Saving =Rs.325

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

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 $=0.360/3\cdot 625\times 100 = 360/3625\times 100 = 36000/3625 = 9.93\%$

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

Correct number $=5.78\times 10^3$
Number wrongly written as $=5.87\times 10^3$
Error $=5.87\times 10^3 - 5.78\times 10^3 = 0.09\times 10^3$
$\%$ Error $=0.09\times 10^3 / 5\cdot 78\times 10^3\times 100 = 0.09/5\cdot 78\times 100 = 95/78\times 100 = 900/578\%$
=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

16/100 of votes polled = 18,336
⇒ Votes polled =18,336×100/16
⇒ Votes polled =18,33,600/16
⇒ Votes polled =1,14,600

∴ Votes secured by winning candidate

=58/100×1,14,600=66,468
Votes secured by losing candidate

=42/100×1,14,600=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 die 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

6/100 of the votes polled=12,366
Votes polled =12,366×100/6=1236600/6=2,06,100
Votes secured by winning candidate

=53/100×2,06,100=1,09,233
∴ 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

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

(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 %

∴ Required maximum marks $= {}_{100/40} \times 68 = 10 \times 17$
=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

∴Pass marks =125+15=140

Let maximum marks = x

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

Hence maximum marks = 400