

Chapter 11 Percentage Exercise 11.1

Exercise-11.1 :-

Solution-01 :-

(i) We have,

$$45\% = \frac{45}{100} = \frac{9}{20}$$

$$(ii) 0.25\% = \frac{0.25}{100} = \frac{25}{10000} = \frac{1}{400}$$

$$(iii) 150\% = \frac{150}{100} = \frac{3}{2}$$

$$(iv) 6\frac{1}{4}\% = \frac{6.25}{100} = \frac{625}{10000} = \frac{1}{16}$$

Solution-02 :-

we have,

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

$$(ii) \frac{53}{100} = \left(\frac{53}{100} \times 100\right)\% = 53\%$$

$$(iii) 1\frac{3}{5} = (1.6 \times 100)\% = 160\%$$

$$(iv) \frac{7}{20} = \left(\frac{7}{20} \times 100\right)\% = 35\%$$

Exercise 11.2

Exercise-11.2.

Solution-01:-

we have,

$$(i) 4:5 = \frac{4}{5} = \left(\frac{4}{5} \times 100\right)\% = 80\%$$

$$(ii) 1:5 = \frac{1}{5} = \left(\frac{1}{5} \times 100\right)\% = 20\%$$

$$(iii) 11:125 = \frac{11}{125} = \left(\frac{11}{125} \times 100\right)\% = \frac{44}{5}\%$$

Solution-02:-

we have

$$(i) 2.5\% = \frac{2.5}{100} = \frac{1}{40}$$

$$(ii) 0.4\% = \frac{0.4}{100} = \frac{1}{250}$$

$$(iii) 13\frac{3}{4}\% = \frac{13.75}{100} = \frac{11}{80}$$

Exercise 11.3

Exercise- 11.3.

Solution-01:-

We have,

$$(i) 12.5\% = \frac{12.5}{100} = 0.125$$

$$(ii) 75\% = \frac{75}{100} = 0.75$$

$$(iii) 128.8\% = \frac{128.8}{100} = 1.288$$

$$(iv) 0.05\% = \frac{0.05}{100} = 0.0005.$$

Solution-02:-

We have,

$$(i) 0.004 = \frac{0.004}{100} = \frac{0.4}{100} = 0.4\%$$

$$(ii) 0.24 = \frac{24}{100} = \left(\frac{24}{100} \times 100\right)\% = 24\%$$

$$(iii) 0.002 = \frac{0.002}{100} = \frac{0.2}{100} = \left(\frac{0.2}{100} \times 100\right)\% = 2\%$$

$$(iv) 0.275 = \frac{27.5}{100} = \left(\frac{27.5}{100} \times 100\right)\% = 27.5\%$$

$$0.275 = 27.5\%$$

Solution-03:-

We have,

$$(i) 136\% = \frac{136}{100} = \frac{34}{25}$$

$$(ii) 250\% = \frac{250}{100} = \frac{5}{2}$$

$$(iii) 300\% = \frac{300}{100} = 3.$$

Exercise 11.4

Exercise- 11.4.

Solution-01:-

We know that P% of x is equal to $\frac{P}{100} \times x$. So, we have.

$$(i) 7\% \text{ of RS } 7150 = \text{RS} \left(\frac{7}{100} \times 7150 \right) = \text{RS } 500.50$$

$$(ii) 40\% \text{ of } 400 \text{ kg} = \text{kg} \left(\frac{40}{100} \times 400 \right) = 160 \text{ kg}$$

$$(iii) 20\% \text{ of } 15.125 \text{ litres} = \text{litres} \left(\frac{20}{100} \times 15.125 \right) \\ = 3.025 \text{ litres.}$$

$$(iv) 3\frac{1}{3}\% \text{ of } 90 \text{ km} = \text{km} \left(\frac{10}{300} \times 90 \right) \quad \left[\because 3\frac{1}{3} = \frac{10}{3} \right] \\ = 3 \text{ km.}$$

$$(v) 2.5\% \text{ of } 600 \text{ metres} = \text{m} \left(\frac{2.5}{100} \times 600 \right) \\ = 15 \text{ metres.}$$

Solution-02:-

Let the required number be x . Then,

$$12\frac{1}{2}\% \text{ of } x = 64$$

$$x = \frac{64 \times 100}{12.5} = 64 \times 8 = 512$$

$$\therefore x = 512.$$

Solution-03:-

Let the required number be x . Then,

$$6\frac{1}{4}\% \text{ of } x = 2$$

$$\Rightarrow \frac{6.25}{100} \times x = 2$$

$$x = \frac{2 \times 100}{6.25}$$

$$x = 2 \times 16$$

$$x = 32.$$

Solution-04:-

Let the required number be x . Then,

$$50\% \text{ of } x = 36$$

$$\frac{50}{100} \times x = 36$$

$$x = \frac{360 \times 2}{50}$$

$$x = \frac{600}{50}$$

$$x = 12.$$

Exercise 11.5 Q1

Ex-11.5

Solution-01:-

We have,

$$\begin{aligned} \text{(i) Required percent} &= \frac{6}{24} \times 100 \\ &= \frac{100}{4} \\ &= 25\%. \end{aligned}$$

Hence, 24 is 6 \rightarrow 25%.

$$\begin{aligned} \text{(ii) Required percent} &= \frac{Rs 10}{Rs 125} \times 100\% \\ &= \frac{1000}{125} \\ &= 8\% \end{aligned}$$

Hence, Rs 10 is 8% of Rs 125.

$$\text{(iii) Required percent} = \frac{160 \text{ metres}}{4 \text{ km}} \times 100$$

We know that, 1 km = 1000 metres

$$\therefore 4 \text{ km} = 4000 \text{ metres}$$

$$\text{Req. Percent} = \frac{160}{4000} \times 100 = \frac{16000}{4000} = 4\%$$

Hence, 160 metres of 4 km is 4%.

Solution-1:-

(iv) Rs 8 is 25 paise

We know that,

$$1 \text{ Rs} = 100 \text{ paise}$$

$$\therefore 8 \text{ Rs} = 8 \times 100 \text{ paise} \\ = 800 \text{ paise}$$

$$\therefore \text{Required percent} = \frac{25 \text{ paise}}{800 \text{ paise}} \times 100 \\ = \frac{25}{8} \% \\ = 3.125\%$$

Hence, 25 paise is 3.125% of Rs. 8

(v) we have,

2 days is 8 hours.

We know that,

$$1 \text{ day} = 24 \text{ hours}$$

$$\text{hour} = \frac{1}{24} \text{ day}$$

$$8 \text{ hours} = \frac{8}{24} \text{ day} = \frac{1}{3} \text{ day}$$

$$\therefore \text{Required percentage} = \frac{\frac{1}{3}}{2} \times 100\% = \frac{100}{6}\%$$

Hence, 8 hours is $16\frac{2}{3}\%$ of 2 days.

(vi) we have,

1 Litre is 175 ml

WKT, 1 litre = 1000 ml

$$\therefore \text{Required Percent} = \frac{175 \text{ ml}}{1000} \times 100 \\ = \frac{175}{10} \times 100 \\ = 17.5\%$$

Hence, 175 ml is 17.5% of 1 Litre.

Solution-02:-

we have,

$$3\frac{3}{4}\%$$

$$\text{Required Percent} = 37.5\%$$

Solution-03:-

we have,

(i) Let x be required number. Then

$$4\% \text{ of } x = 8$$

$$\frac{4}{100} \times x = 8$$

$$x = \frac{800}{4}$$

$$x = 200$$

Req. number = 200

(ii) Let x be the required required number.

Then

$$60\% \text{ of } x = 6$$

$$\frac{60}{100} \times x = 6$$

$$x = \frac{600}{60}$$

$$x = 10$$

Hence, required number is 10.

(iii) Let x be the required number, Then

$$30\% \text{ of } x = 6$$

$$\frac{30}{100} \times x = 6$$

$$x = \frac{6 \times 100}{30}$$

$$x = 20$$

Hence, required number is 20

(iv) Let x be the required number, Then

$$25\% \text{ of } x = 12$$

$$\frac{25}{100} \times x = 12$$

$$x = \frac{12 \times 100}{25}$$

$$x = 12 \times 4$$

$$x = 48.$$

Hence, required number be 48

Solution-04:-

we have

$$\begin{aligned} \text{(i) } 25 \text{ marks out of } 30 &= \frac{25}{30} \times 100\% \\ &= \frac{250}{3}\% \\ &= 83.33\% \end{aligned}$$

$$\begin{aligned} 35 \text{ marks out of } 40 &= \frac{35}{40} \times 100\% \\ &= \frac{7}{8} \times 100\% \\ &= 7 \times 12.5\% \\ &= 87.5\% \end{aligned}$$

\therefore 35 marks out of 40 (87.5%) is more than 25 marks out of 30.

$$\begin{aligned} \text{(ii) } 100 \text{ runs scored off } 110 \text{ balls} &= \frac{100}{110} \times 100\% \\ &= 90.91\% \end{aligned}$$

$$\begin{aligned} 50 \text{ runs scored off } 55 \text{ balls} &= \frac{50}{55} \times 100\% \\ &= 90.91\% \end{aligned}$$

Both are same (90.91%)

Solution-05:-

we have,

$$20\% \text{ of Rs } 200 = \frac{20}{100} \times 200 = \text{Rs } 40$$

$$\begin{aligned} \therefore 20\% \text{ more than Rs } 200 &= \text{Rs } 200 + \text{Rs } 40 \\ &= \text{Rs } 240. \end{aligned}$$

Solution-06:-

we have,

$$10\% \text{ of Rs } 150 = \frac{10}{100} \times 150$$

$$= \frac{1500}{100}$$

$$= \text{Rs } 15$$

$$\therefore 10\% \text{ less than Rs } 150 = \text{Rs } (150 - 15)$$

$$= \text{Rs } 135.$$

Exercise-11.6

* Exercise-11.6 *

Solution-01:-

Total number of Pages = 24.

no of Pages completed = 25% of 24 pages

$$= \frac{25}{100} \times 24$$

$$= \frac{1}{4} \times 24$$

$$= 6 \text{ pages.}$$

\therefore No. of Pages Left = Total - Pages completed
 $\therefore = (24 - 6) \text{ Pages}$
 $= 18 \text{ Pages.}$

Solution-02:-

Total no. of eggs = 60 eggs.

no of eggs rotten = $16\frac{2}{3}\%$ of 60 eggs

$$= 16.66\% \text{ of } 60 \text{ eggs}$$

$$= \frac{16.66}{100} \times 60$$

$$= 10 \text{ eggs}$$

\therefore no. of eggs rotten = 10 eggs.

Solution-03:-

total number of marks = 80.

Rohit obtained = 45.

$$\text{Required percent} = \frac{45}{80} \times 100$$

$$= \frac{9 \times 5}{8} \times 100$$

$$= 56\frac{1}{4}\%$$

$$= 56.25\%$$

Solution-04:-

Salary = Rs 15900

Savings = 12% of salary

$$= \frac{12}{100} \times 15900$$

$$= \text{Rs } 1908$$

\therefore expenditure = salary - Savings

$$= 15900 - \text{Rs } 1908$$

$$= \text{Rs } 13992$$

Solution-05:-

Total amount = RS 2,50,000.

$$\therefore 30\% \text{ of amount} = \frac{30}{100} \times 2,50,000$$

$$= 30 \times 2,500$$

$$= 75,000.$$

$$45\% \text{ of amount} = \frac{45}{100} \times 2,50,000$$

$$= 45 \times 2,500$$

$$= \text{Rs } 1,12,500$$

$$25\% \text{ of amount} = \frac{25}{100} \times 2,50,000$$

$$= 25 \times 2,500$$

$$= 62,500.$$

\therefore portions of amounts are

75,000, 1,12,500 and 62,500

Solution-06:-

Total no. of students = 2400

$$40\% \text{ of } 2400 = \frac{40}{100} \times 2400$$

$$= 40 \times 24$$

$$= 960 \text{ girls}$$

\therefore No of Boys = Total - girls

$$= 2400 - 960$$

$$= 1440 \text{ boys.}$$

Solution-07:-

Aman obtained 410 marks out of 500

$$= \frac{410}{500} \times 100$$

$$= 82\%$$

Anish

$$536 \text{ marks out of } 600 = \frac{536}{600} \times 100$$

$$= 89\%$$

Anish's performance better.

Solution-08:-

Total No. of marks = 75

Rahim obtained = 60.

$$\begin{aligned}\text{Required percent} &= \frac{60}{75} \times 100 \\ &= 80\%.\end{aligned}$$

Solution-09:-

Total number of trees = 240.

apple trees = $16\frac{2}{3}\%$ of 240

$$= 16.66\% \text{ of } 240$$

$$= \frac{16.66}{100} \times 240$$

$$= 40$$

= 40 trees

no. of trees other than apple = Total - apple trees

$$= (240 - 40)$$

$$= 200 \text{ trees}$$

Solution-10:-

Ram obtained 553 out of 700

$$\text{Ram Percentage} = \frac{553}{700} \times 100\%$$

$$= \frac{553}{7}$$

$$= 79\%$$

Gita scored 486 out of 600 in science

$$\text{Gita percentage} = \frac{486}{600} \times 100$$

$$= \frac{486}{6}$$

$$= 81\%$$

\therefore Gita performance is better

Solution-11:-

Total income = Rs 15000

Savings = income - expenditures

$$= \text{Rs } 15,000 - 10,200$$

$$= \text{Rs } 4,800.$$

$$\text{percentage of income} = \frac{4800}{15000} \times 100 = 32\%$$

Solution - 12:-

Total number of students = 880

No. of boys = 45% of student

$$= 45\% \text{ of } 880$$

$$= \frac{45}{100} \times 880$$

$$= 45 \times 8.8$$

$$= 396 \text{ boys.}$$

No. of girls = Total - Boys

$$= 880 - 396$$

$$= 484 \text{ Girls.}$$

\therefore No. of girls = 484 girls.