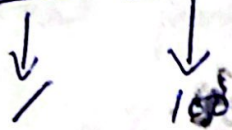


Percentage:

Percentage



center $\rightarrow 100$

Sign $\rightarrow 100\%$
abbreviations = pct or p.c.

Pakistan has diabetes
rate of 30.8% $\rightarrow 2023$

$$30\% = \frac{30}{100} = 0.3.$$

① Change into Common fraction:

$$40\% = \frac{40}{100} = \frac{2}{5}$$

$$80\% = \frac{80}{100} = \frac{4}{5}$$

② Change into percentage:

(i) $\frac{4}{5}$

$$\Rightarrow \frac{4}{5} \times 100 = \frac{400}{5} = 80\%$$

(ii) $\frac{20}{80}$

$$\Rightarrow \frac{20}{80} \times 100 = \frac{2000}{80} = \frac{200}{8} = \frac{50}{2} = 25\%$$

(iii) $\frac{3}{11}$

③ change $45\frac{1}{2}\%$ into simple fraction.

$$\frac{91}{2} \times \frac{1}{100} = \frac{91}{200}$$

④ what is 25% of 80.

$$\frac{25}{100} (80) = \frac{100}{5} = 20\%$$

⑤ what is the percentage ratio of 5:4.

Sol: $\frac{5}{4} (100) = 125\%$

⑥ A fruit seller has some apples. He sells 40% apples and still has 420 apples. How many apples he had in total?

Sol: =

$$100\% (x) = 420$$

$$(100\% - 40\%) x = 420$$

$$60\% (x) = 420$$

$$\frac{60}{100} (x) = 420$$

$$\frac{3}{5} x = 420$$

$$x = \frac{420 \times 5}{3} = \frac{7 \times 100}{1} = 700$$

He had 700 apples in total. (6 percent of 700)

Q: what is 70% of a kg?

$$\frac{70}{100} (1000) = 700g = 0.7 \text{ kg.}$$

Q: what percent of 20 is 15?

$$x\% \text{ of } 20 = 15.$$

$$x\% (20) = 15.$$

$$\frac{x}{100} (20) = 15$$

$$\frac{x}{5} = 15.$$

$$x = 15 \times 5 = 75\%.$$

Q: what percent of 40 is 14?

$$x\% (40) = 14$$

$$\frac{x}{100} (40) = 14$$

$$\frac{x}{5} = 14$$

$$x = \frac{70}{2} = 35\%.$$

Q:- Angela loves to travel and spends 25% of the year on vacation and works for the rest of the year. what fraction of year does she travel?

$$25\% (12)$$

$$\frac{25}{100} (12)$$

$$\frac{1}{4} (\text{of a year}) = \frac{1}{4}$$

~~... but only ...~~
~~... what percentage of the registered ...~~
~~... the ...?~~

Q. In a flower vase there are 20 flowers.
 There are 5 lilies and 15 roses.
 What percent of flowers are lilies.

Method 1

$$x\% (20) = 5$$

$$\frac{x}{100} (20) = 5$$

$$x = 5 \times 5$$

$$x = 25\%$$

Method 2:

$$\Rightarrow \frac{5}{20} \times 100$$

$$= 5 \times 5 = 25\%$$



→ percentage to decimals:

$$8\% = \frac{8}{100} = 0.08$$

$$30\% = \frac{30}{100} = 0.3$$

$$15\% = \frac{15}{100} = 0.15$$

$$75\% = \frac{75}{100} = 0.75$$

Prepared by
 Mohsin Amin

7) In a parking there are 800 cars in which 80% cars are Pakistani made. Find the no. of Pakistani made cars.

Sol:

Total Cars = 800

Pakistani made cars = 80%

= 80% of 800

= $\frac{80}{100} (800) = 640$

no. of Pakistan made cars = 640

8) when 40% of a number is added to 42; the result is the no. itself. Find the number?

Sol:

let the number = x.

$40\% (x) + 42 = x$

$\frac{40}{100} (x) + 42 = x$

$\frac{42}{10} + 42 = x$ By taking "LCM"

~~$\frac{2x}{5} + 42 = x$~~
 ~~$\frac{2x + 210}{5} = x$~~

$\frac{4x + 420}{10} = x$

$4x + 420 = 10x$

$6x = 420$

$x = \frac{420}{6} = \boxed{x = 70}$

99

There are 50 students in a class.

If 14% are absent on a particular ^{Present} day, find the no. of students in the class.

Sol:

Total students in the class = 50
percentage of absent students = 14%

$$14\% (50) = \frac{14}{100} (50) = 7$$

no. of present students in the class:

$$50 - 7 = 43$$

Students that are present in the class are 43.

100
(C.S.S. 2017)

A man buys 5 kg of meat at Rs 500/kg. In addition for every kilogram he purchased, he has to pay a consumption tax of 6% on the selling price. Calculate the total amount of money that he has to pay? (C.S.S. 2017)

Sol:

Total kg of meat man bought = 5 kg.

$$\text{Total price of kg} = 500 \times 5 = 2500$$

Consumption tax that he paid = ~~5%~~ 6%. (5)

$$\Rightarrow 6\% (500)$$

$$\Rightarrow \frac{6}{100} (500) = 30$$

Rs.

$$\text{Total tax on 5 kg} = 30 \times 5 = 150$$

Total amount that the man has to pay :

$$\begin{array}{ccc} \frac{2500}{\downarrow} & + & \frac{150}{\downarrow} = 2650 \\ \text{Principal} & & \text{C. tax} \\ \text{amount} & & \end{array}$$

(11)

(CSS 2021)

Mr. Faheem has a dinner with his family at a restaurant which offers 10% discount on food. The marked price of the food that they order was Rs 15000/- . Given that there was a service charge of 10% and GST is 17%. Calculate the total amount of money that he has to pay?

Sol:

Marked price of food = Rs 15000/-
discount = 10%

$$\frac{10}{100} (15000) = 1500$$

$$\Rightarrow 15000 - 1500 = 13500$$

* Discounted price = 13500

* Service charges on discounted price = 10%

$$\frac{10}{100} (13500) = 1350$$

* GST to be paid = 17%

$$\frac{17}{100} (15000) = 2550$$

$$\begin{aligned} \text{Total amount to be paid} &= D.P + S.C + GST \\ &= 13500 + 1350 + 2550 \end{aligned}$$

Total amount that he has to pay is 17400.

17400

(CSS 2023)

7

Ali buys an oven for Rs 36800
and sells it at a gain of 8.5%.
For how much does he sell it.?

Soln

$$\text{Cost price of oven} = 36800.$$

$$\text{Gain \%} = 8.5 \%$$

$$8.5\% (36800).$$

$$\frac{8.5}{100} (36800) = 368 \times 8.5 = 3128.$$

$$\begin{aligned} \text{Amount that he sold the oven} \\ &= 36800 + 3128 \\ &= 39928 \text{ Rs.} \end{aligned}$$

OR.

$$\text{Profit \%} = \frac{\text{Profit}}{\text{Cost price}} \times 100$$

$$\text{Profit} = \frac{(\text{Profit \%})(\text{Cost price})}{100}$$

$$= \frac{(8.5)(36800)}{100}$$

$$= 368 \times 8.5$$

$$= 3128$$

$$\text{Total} = 36800 + 3128 = 39928 \text{ Rs.}$$

$$\text{Loss \%} = \frac{\text{Loss}}{\text{Cost price}} \times 100$$