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Aptitude

Percentage, Profit &amp; Loss Question bank

GoodLuck

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Date

## Assignment - 1

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① What is 25% of 200

→

$$\frac{25}{100} \times 200$$

$$= 50$$

② If 40% of No is 80, what is the number?

→

$$40\% \text{ of } x = 80$$

$$\frac{40}{100} \times x = 80$$

$$\therefore x = \frac{80 \times 100}{40}$$

$$\therefore x = 200$$

③ 75% of No is 150, what is number?

→

$$75\% \text{ of } x = 150$$

$$\frac{75}{100} \times x = 150$$

$$x = \frac{150 \times 100}{75}$$

$$x = 200$$

④ What is 15% of 120?

→

$$15\% \text{ of } 120 = \frac{15}{100} \times 120$$

$$= 18$$



⑤ If 30% of No is 90 the what is number

→  $30\% \text{ of } x = 90$

$$\frac{30}{100} \times x = 90$$

$$x = \frac{90 \times 100}{30}$$

$$\boxed{x = 300}$$

⑥ price of product increase from 200 Rs to 250 Rs  
what is % increase?

→  $\% \text{ increase} = \left( \frac{250 - 200}{200} \right) \times 100$

$$= \frac{50}{200} \times 100$$

$$\boxed{= 25\%}$$

⑦ Salary increase from 40000 to 50000 Rs. find  
% increase?

→  $\% \text{ increase} = \left( \frac{50000 - 40000}{40000} \right) \times 100$

$$= \frac{10000}{40000} \times 100$$

$$\boxed{= 25\%}$$

⑧ ~~for~~ population of two town decreased from 10000  
to 8000 what is % decreased?

→  $\% \text{ decreased} = \left( \frac{10000 - 8000}{10000} \right) \times 100$

$$= \frac{2000}{10000} \times 100$$

$$\boxed{= 20\%}$$



- (9) Book price drops from Rs 500 to 400. What is % decrease?

$$\begin{aligned} \rightarrow \quad \% \text{ decreased} &= \left( \frac{500 - 400}{500} \right) \times 100 \\ &= \frac{100}{500} \times 100 \\ &= 20\% \end{aligned}$$

- (10) Cost price of item is 600 Rs & S.P is 450 Rs. What is % loss?

$$\begin{aligned} \rightarrow \quad \% \text{ loss} &= \left( \frac{600 - 450}{600} \right) \times 100 \\ &= \frac{150}{600} \times 100 \\ &= 25\% \end{aligned}$$

- (11) Which is greater 30% of 400 or 40% of 300?

<p>30% of 400</p> $\frac{30 \times 400}{100}$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">= 120</div>	<p>40% of 300</p> $\frac{40 \times 300}{100}$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">= 120</div>
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both are same  
i.e 120.

- (12) Person spends 60% of income & saves 8000. What is his total income?

$$\begin{aligned} \rightarrow \quad & 60\% \text{ spend then } 40\% \text{ saved} \\ & 40\% \text{ of income} = 8000 \text{ Rs} \\ & \text{Total income} = \frac{8000 \times 100}{40} \\ & \text{Total income} = 20000 \text{ Rs} \end{aligned}$$



(13) A is 20% more than B, B is how much less than A?

→ If A is 120 of B  
then B is  $\frac{100}{120}$

$$= 16.67\% \text{ less}$$

(14) Price of sugar increased by 25% by how much should be consumption be reduced to maintain same expense?

original price be 100

New price 125% of original

to maintain same cost

$$\% \text{ consumption reduced} = \frac{100 - 125}{125} \times 100$$

$$= -\frac{25}{125} \times 100$$

$$= 20\%$$

(15) A income is 40% more than B income, then B income is what % less than A's?

→ if A = 140% of B

$$B = \frac{100}{140} \times 100$$

$$= 28.57\%$$

(16) Price of item increased by 20% & decreased by 10%. What is net percentage change?

→ Let 100 be original price

$$20\% \uparrow \text{ New price} = 120 \text{ Rs}$$

$$10\% \downarrow \text{ New price} = 120 - 10\%$$

$$= 120 - 12$$

$$= 108 \text{ Rs}$$

% decrease =

$$\left( \frac{20 - 108}{120} \right) \times 100$$

$$\% \text{ decrease} = 8\%$$



- (17) No increased by 30% & decreased by 20%. What is final % change

→

original No be 100

$$30\% \uparrow \quad 100 + 30\% = 100 + 30 = 130$$

$$20\% \downarrow \quad 130 - 20\% = 130 - 26 = 104$$

$$\% \text{ increase} = \left( \frac{104 - 100}{100} \right) \times 100$$

$$\% \text{ increase} = 4\%$$

- (18) population of city increased by 25% & decreased by 20%. What is net % change?

→

let 100 be original population

$$25\% \uparrow \quad 100 + 25\% = 100 + 25 = 125$$

$$20\% \downarrow \quad 125 - 20\% = 125 - 25 = 100$$

$$0\% \quad \text{No change population}$$

- (19) price increase by 40% & the decrease by 30%. final change?

→

let 100 be original price

$$40\% \uparrow \quad 100 + 40\% = 100 + 40 = 140$$

$$30\% \downarrow \quad 140 - 30\% = 140 - 42 = 98$$

$$\text{change} = 100 - 98$$

$$\text{Change} = 2\%$$

- (20) salary  $\uparrow$  20% &  $\downarrow$  10%. find % change.

→

let 100 be original salary

$$20\% \uparrow \quad \text{is } 100 + 20\% = 100 + 20 = 120$$

$$10\% \downarrow \quad 120 - 10\% = 120 - 12 = 108$$

$$\% \text{ increase} = \left( \frac{108 - 100}{100} \right) \times 100$$

$$\% \text{ increase} = 8\%$$



(21) if article sold at profit 25%. the S.P is what % of C.P?

→ 
$$\begin{aligned} \text{S.P} &= 100 + 25\% \text{ of C.P} \\ &= 100 + 25 \left( \frac{100 \times 25}{100} \right) \\ &= 100 + 25 \\ \boxed{\text{S.P} &= 125\% \text{ C.P}} \end{aligned}$$

Assumed  
Here 100 is  
C.P

(22) Shopkeeper allows 10% discount on M.P & still makes profit 8%. If M.P is 500 Rs what is C.P?

→ 
$$\begin{aligned} \text{S.P} &= 90\% \text{ of 500} \\ &= \frac{90}{100} \times 500 \\ &= 450 \text{ Rs} \end{aligned}$$

Let C.P be x

profit 8%,  $\text{S.P} = 108\% \text{ of C.P}$

$$450 = \frac{108}{100} x$$

$$x = \frac{450 \times 100}{108}$$

$$\boxed{x = 420 \text{ Rs}}$$

(23) profit is 20% of C.P then what is Profit % on S.P?

→ Let 100 be original C.P.

$$\text{profit \% S.P} = \frac{20}{100 + 20} \times 100 = \frac{20}{120} \times 100$$

$$\boxed{\text{profit \%} = 16.67\%}$$



- (24) A product is marked at 1200 Rs & sold for 960 Rs. What is % discount?

$$\rightarrow \text{discount \%} = \left( \frac{1200 - 960}{1200} \right) \times 100$$

$$\boxed{\% \text{ discount} = 20\%}$$

- (25) article brought for Rs 500 & sold for Rs 650. what is % profit?

$$\rightarrow \% \text{ profit} = \left( \frac{650 - 500}{500} \right) \times 100$$

$$= \frac{150}{500} \times 100$$

$$\boxed{\% \text{ profit} = 30\%}$$

- (26) If A's income is 20% more than B, then B's income is what % less than A's?

$$\rightarrow B + 20\% = A$$

$$\begin{array}{ccccc} 100 & \rightarrow & 120 & \rightarrow & 100 \\ B & & A & & B \end{array} \quad \frac{20 \times 100}{120} = \frac{1}{6} \times 100$$

$$\boxed{= 16.67\%}$$

- (27) if ratio of boys to girls is 3:2 what % of total students are boys?

$$\rightarrow \text{parts Total} = 3 + 2 = 5$$

$$\% \text{ boys} = \frac{3}{5} \times 100$$

$$\boxed{\% \text{ boys} = 60\%}$$

$$\text{i.e. \% girls} = \frac{2}{5} \times 100$$

$$\boxed{\% \text{ girls} = 40\%}$$



- (28) City population increased from 200,000 to 250,000 in 2 years. What is % increase?

$$\begin{aligned} \rightarrow \text{\% increase} &= \frac{250000 - 200000}{200000} \times 100 \\ &= \frac{50000}{200000} \times 100 \\ \boxed{\text{\% increase} &= 25\%} \end{aligned}$$

- (29) In election candidate get 65% of total votes & win by 3000 votes. How many total votes were cast?

$$\begin{aligned} \rightarrow x &\text{ be total votes} \\ 65\% \text{ of } x &= 3000 \\ x &= \frac{3000 \times 100}{65} \\ \boxed{x &= 6000 \text{ votes}} \end{aligned}$$

- (30) Price of article reduced by 30%. By what % must price be increased to restore original price?

$$\begin{aligned} \rightarrow \text{New price} &= 70\% \text{ of original} \\ \text{increase by} &= \left( \frac{100 - 70}{70} \right) \times 100 \\ &= 42.85\% \end{aligned}$$

- (31) NO increased by 50% & decreased by 50%. What is net % change?

$$\begin{aligned} \rightarrow 100 &\text{ be original} \\ 50\% \uparrow & \quad 100 + 50\% \text{ of } 100 = 150 \\ 50\% \downarrow & \quad 150 - 50\% \text{ of } 150 = 150 - 75 \\ &= 75 \\ \text{\% change} &= \left( \frac{75 - 150}{150} \right) \times 100 = -25\% \end{aligned}$$

$$\boxed{\text{\% change} = -25\%}$$



(32) A is 20% taller than B then B is shorter than A by

→ B is  $\frac{100}{120} \times 100$

$$B = 16.67\% \text{ shorter than A}$$

(33) If 30% of No is 90, what is 60% of same number?

→ Let that number

$$30\% \text{ of } x = 90$$

$$x = 90 \times \frac{100}{30}$$

$$x = 300$$

$$60\% \text{ of } 300 = \frac{60}{100} \times 300$$

$$= 180$$

(34) Person spends 75% of his income & saves 5000 Rs. What is his total income?

→ total income =  $5000 \times \frac{100}{25}$

$$= 20000 \text{ Rs}$$

(35) price of petrol increase by 20%. what % should consumption reduced to men's same expense.

→ original expense = 100

$$\text{new expense} = 100 + 20\% \text{ of original} = 100 + 20 = 120$$

$$\% \text{ reduced consumption} = \left( \frac{100-120}{120} \right) \times 100$$

$$= 16.67\%$$



(36) price of TV  $\uparrow 20\%$  &  $\downarrow 10\%$  what is overall change %?

$\rightarrow$  100 be original

20%  $\uparrow$  new price  $100 + 20 = 120$

10% decrease  $120 - 10\% \text{ of } 120 = 120 - 12 = 108$

$$\% \text{ change} = \frac{100 - 108}{100} \times 100$$

$$\% \text{ change} = 8\%$$

(37) Shopkeeper marks an item 25% above C.P & gives 20% discount. What is profit/loss percentage?

$\rightarrow$  Let C.P be 100 Rs

M.P = 125 i.e  $100 + 25 = 125$  Rs

S.P =  $125 - 20\% \text{ of } 125$

$$= 125 - 25$$

$$S.P = 100 \text{ Rs}$$

S.P = C.P i.e 0% profit

(38) man sold bicycle for 1500 Rs which he bought for 1200 Rs what is % profit?

$$\% P = \left( \frac{1500 - 1200}{1200} \right) \times 100 = 25\%$$

(39) If 40% of number is 60 what is number?

$\rightarrow$  40% of  $x = 60$

$$x = \frac{60 \times 100}{40}$$

$$x = 150$$



- 40) population  $\uparrow$  10% annually, If current population is 10000. What will be population after 2 years?

→ ~~population~~  
 population after 2 years =  $10000 \times \left(1 + \frac{10}{100}\right)^2$   
 $= 10000 \times 1.21$   
 $= 12100$

- 41) If 5% of number is 25 what is number?

→ 5% of  $x = 25$   
 $x = \frac{25 \times 100}{5}$

$x = 500$

- 42) A person saves 20% of his income. If his saving amount is 10000. What is his total income?

→ total income =  $\frac{10000 \times 100}{20}$

$= 50000 \text{ Rs}$

- 43) discount of 15% on shirts result in price reduction of Rs 45. What is original price of shirt?

→ ~~100% on~~  
 15% of original price = 45  
 original price =  $\frac{45 \times 100}{15}$

original price = 300 Rs



- (24) product sold for 600 & profit made is 120 Rs. what is % profit?

$$\% \text{ profit} = \frac{120}{600 - 120} \times 100$$

$$\% \text{ profit} = 20\%$$

- (25) If No is reduced by 10%. then  $\uparrow$  by 10% what's % change?

100 be original

10%  $\downarrow$  means 90

10%  $\uparrow$  means  $90 + 10\% \text{ of } 90 = 90 + 9 = 99$

$$\% \text{ change} = \left( \frac{100 - 99}{99} \right) \times 100$$

$$\% \text{ change} = 1\% \text{ decreased.}$$

- (46) A person invest 5000 Rs at 8% simple interest Per annum for 2 years what is total interest earned?

$$\text{interest} = \frac{5000 \times 8 \times 2}{100}$$

$$\text{interest} = 800 \text{ Rs}$$

- (27) Original price of shirt 300 Rs & sold for 360 Rs what is percentage increase?

$$\% \text{ increase} = \left( \frac{360 - 300}{300} \right) \times 100 = \frac{60}{300} \times 100 = 20\%$$



- (48) price of product ↑ by 25%. If original price is 400 Rs what is new price?

$$\begin{aligned}\rightarrow \text{New price} &= 400 + 25\% \text{ of } 400 \\ &= 400 + \frac{25 \times 400}{100} \\ &= 400 + 100\end{aligned}$$

$$\boxed{\text{New price} = 500 \text{ Rs}}$$

- ~~(49) price ↑ 25% & original price is~~

- (49) person gains 200 Rs by selling article for 1200 Rs what is % profit?

$$\rightarrow \% \text{ profit} = \left( \frac{200}{1200 - 200} \right) \times 100 = \left( \frac{200}{1000} \right) \times 100$$

$$\boxed{\% \text{ profit} = 20\%}$$

- (50) If C.P is 1000 Rs & S.P 1200 Rs what is % profit?

$$\rightarrow \% \text{ profit} = \left( \frac{200}{1000} \right) \times 100 \quad \left( \frac{\text{change in price} \times 100}{\text{original price}} \right)$$
$$\boxed{\% \text{ profit} = 20\%}$$