Assignment (Percentage)

1] What is the 25% of 200

→ $\frac{25}{100} \times 200 = 50$

2] If 40% of a number is 80, what is the number ?

→ $\frac{40}{100} = \frac{2}{5} \rightarrow 80 \rightarrow \frac{80}{2} = 40\% \left(\frac{2}{5}\right)$

$40 \times 5 = 200$

3] 75% of a number is 150. What is the number.

→ $\frac{75}{100} = \frac{3}{4} \rightarrow 150 \quad 50 \times 4 = 200$

4] What is 15% of 120

→ $\frac{15}{100} \times 120 = 18$

5] $\frac{30}{100} = \frac{3}{10} \rightarrow 90 = 30 \times 10 = 300$

6] 200 → 250 (+50 increase) (50 ↑) → 200

$\frac{50}{200} \times 100 = 25\%$

जिस no. से increase hua hai vo niche aaega

A salary increases from 40,000 to 50,000

40,000 → 50,000 (↑ 10,000)

$\frac{10000}{40000} \times 100 = \frac{1000}{400} = \frac{100}{4} = 25\%$.

10,000 → 8000 (↓ 2000 decrease)

$\frac{2000}{10000} \times 100 = 20\%$ decrease

500 → 400 (↓ 100 decrease)

$\frac{100}{500} \times 100 = 20\%$.

Cost price of an item → 600

S.P → 450

600 → 450 (↓ 150 decrease)

$\frac{150}{600} \times 100 = \frac{150}{4} = \frac{100}{4} = 25\%$.

30% of 400 or 40% of 300

$\frac{30}{100} \times 400$ or $\frac{40}{100} \times 300$

120 or 120 (120 = 120)

Ans. Both are equal

12] 100% → Total income

↓

60% → spend

Save = 8000

↓40% decrease

100 → 60

$\frac{40}{100} = \frac{2}{5}$ → 8000 → $\frac{1000}{8000} = 4000 \times 5 = 20,000$

13]

A is ↑ 20% B

A ↑ 20% B (100)

$\frac{20}{100} = \frac{1}{5}$

B is how much less than A

A	B
6	5

Assume B = 100

∴ A is 20% more than B $\frac{20}{100} \times 100 = 20\%$

A = 100 + 20 = 120

Find how much B is less than A

Decrease = A − B

= 120 − 100 = 20

$\frac{20}{120} \times 100 = 16.67\%$.

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

$100 + 25 = 125$

100 ↑ by 25% = 125

$\frac{25^{1}}{125_{5}} \times 100 = \frac{1}{5} \times \frac{100}{1} = \frac{100^{20}}{5_{1}} = 20\%$

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

A 7 B 5

2

$\frac{2}{7} \times 100 = \frac{200}{7} = 28.5\%$

28.5
$7\overline{)200}$
14
60
56
40
35
5

% net chang $= a + b + \frac{ab}{100}$

$= 20 + (-10) + \frac{(20) \times (-10)}{100}$

$= 10 - \frac{200}{100}$

$= 8\%$ increase

$= 30 + (-20) + \frac{30 \times (-20)}{100}$

$= 10 - \frac{600}{100}$

$= 4\%$ increase

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18] $= 25 + (-20) + \frac{25 \times (-20)}{100}$

$= 5 + 5 - \frac{5\cancel{0}}{\cancel{100}_{2}}$

$= \frac{5}{1} - \frac{1}{2} = \frac{10-1}{2} = \frac{9}{2}$

$= 5 + \frac{(-500)}{100}$

$5 - \frac{50}{100} = 5 - 5 = 0$

Ans. 0%.

19] $= 40 - 30 + \frac{(40 \times -30)}{100}$

$= 40 - \frac{1200}{100}$

$= -2\%$

Ans. 2% decrease

~~20]~~ $= 20 + (-30) + \frac{(20 \times (-30))}{100}$

$= 20 - 30 - \frac{600}{100}$

$= -10 - 6$

$=$

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Q) $20 + (-10) + \frac{(20 * (-10))}{100}$

$10 - \frac{200}{100} = 10 - 2 = 8\%$ increase

21]

$$SP = CP \times \frac{(100 + \%\ gain)}{100}$$

$$= 100 \times \frac{(100 + 25)}{100}$$

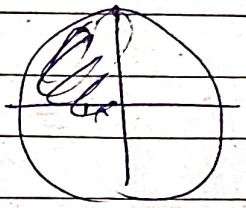
$$= ₹ 125/-$$

22] P = 20% , SP = ?

$$\%\ Gain = \frac{SP - CP}{CP} \times 100$$

$$20 =$$

Let CP = 100



$$Profit = \frac{20}{100} \times 100 = 20$$

$$SP = CP + Profit$$
$$= 100 + 20$$
$$SP = 120$$

$\frac{100}{2}$

- Profit % SP

$$= \frac{Profit}{SP} \times 100$$

$$= \frac{20}{120} \times 100 = \frac{200}{12}$$

$\frac{3}{4} =$

$\frac{3}{4}$ 0.75

4) 3

-28

30

-28

20

-20

0

6.6

12) 200

-12

80

-72

80

-72

8

$= 16.67\%$

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24) ~~Loss = CP - SP~~

~~= 2~~

24) D = Marked price - Selling price

= 1200 - 960

D = 240

Percentage discount :

$= \frac{\text{Discount}}{\text{M.P}} \times 100$

$= \frac{240^{20}}{1200} \times 100 = 20\%$

25) buy :- 500 (CP)

S.P - 650

Profit = SP - CP

= 650 - 500

Profit = 150

$= \frac{\text{Profit}}{\text{CP}} \times 100$

$= \frac{150^{30}}{500} \times 100$

= 30%.

26) A = A ↑ 20% by = $\frac{20}{100} \times 100 = 20$

A = 100 + 20 = 120

A - B = 120 - 100

= 20

$\frac{20}{120} \times 100 = 16.67\%$.

27) 3 + 2 = 5 (Total students)

$\frac{3}{5} \times \frac{20}{100} = 60\%$.

28) 2,00,000 → 2,50,000 ↑ 50,000

$\frac{50,000}{2,00,000} \times 100$

= 25%.

29) 65% → 100%

65%x - 35%x = 3000

30%x = 3000

$x \times \frac{30}{100} = 3000$

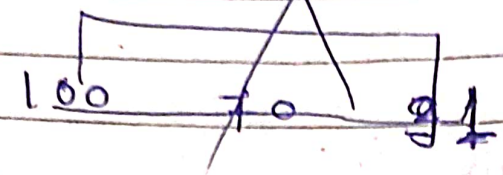
$x = \frac{3000 \times 100}{30}$

x = 10,000

30

100 ↓ by 30% = ~~130~~ 70

70 ↑ by 30% = 91



$\frac{30}{100} \times 70$

21

doubt

30] C.P = 100

100 − 30 = 70

$= \frac{100-70}{70} \times 100 = \frac{30}{70} \times 100$

$= \frac{300}{7} = 42.85\%$.

31] $-\left(\frac{25}{10}\right)^2 = -\left(\frac{50}{10}\right)^2$

50×50

2500

$= -\frac{2500}{100} = -25\%$.

25% decrease

32] B = 100

A = 100 ↑ 20% = 120

B is shorter than A

$= 120 - 100$

$= 20$

$\frac{20}{120} \times 100 = \frac{200}{12} = 16.67\%$.

16.6

12) 200

−12

80

−72

8

33] $\frac{30}{100} \times 90$

$= \frac{270}{10} = 27$

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

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

$x = 300$

60% of $x = ?$

$\frac{60}{100} \times 300 = 180$

34] 75% of $x = 5000$

$\frac{75}{100} \times x = 5000$

$x = \frac{5000 \times 100}{75}$

$x = 20,000$

36] $20 + (-10) + \frac{20 \times (-10)}{100}$

$= 10 - \frac{200}{100} = 10 - 2$

$= 8$

Ans. 8% increase

37] 100 ↑ by 25% = 125 $\frac{20}{100} \times 125$

125 ↓ by 20% =

↓

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

$= \frac{125}{1} - \frac{125}{5}$

$= \frac{625 - 125}{5} = \frac{500}{5} = 100$

Profit = SP − CP

= 100 − 100 = 0%

Ans.

38] 1088% = $\frac{CP \sim SP}{CP} \times 100$

20 = $\frac{500 - SP}{500} \times 100$

$SP = CP \times \frac{(100 - 1.1088)}{100}$

$= 500 \times \frac{(100 - 20)}{100}$

$= 5 \times 80$

$= 400$

39] $-\left(\frac{x}{10}\right)^2$

$= -\left(\frac{10}{10}\right)^2$

$= -\frac{100}{100} = -1$

Ans: 1% decrease

40] Passing mark = 200 + 20 = 220

40% of Total marks = 220

$\frac{40}{100} \times = 200$

$x = \frac{220 \times 100}{40}$

$= 110 \times 5$

$= 550$

Total marks = 550

doubt
41] 20% + 30% + 10% = 60%

100 − 60 = 40

Saving of 40% of salary = 18,000

$\frac{40}{100} \times 18000$

42] $-\left(\frac{x}{10}\right)^2$

$= -\left(\frac{30}{10}\right)^2$

$= -\frac{900}{100}$

$= -9$

Ans. 9% decrease

Compound interest

43] Initial population (P) = 10,000

Annual increase = 10% (R)

Time = 3 years

$P_t = P \times \left(1 + \frac{r}{100}\right)^t$

$= 10,000 \times \left(1 + \frac{10}{100}\right)^3$

$= 10,000 \times \left(\frac{100+10}{100}\right)^3$

$= 10,000 \times \left(\frac{110}{100}\right)^3$

$= 10,000 \times \frac{110 \times 110 \times 110}{100 \times 100 \times 100}$

$= \frac{110 \times 110 \times 110}{100}$

$= \frac{1,331,000}{100} = 13,310$

44] $\frac{A}{B} = \frac{20}{15} = \frac{4}{3}$

SP

45] $SP = \frac{100\ CP \times (100 + \%\ Profit)}{100}$

$= \frac{800 \times (100 + 25)}{100}$

$= 8 \times 125$

$= 1000$

$SP = CP + 25\%$ of CP

$= 800 + \frac{25}{100} \times 800$

$= 1000$

46] $\%\ gain = \frac{SP + CP}{CP} \times 100$

$SP + CP = 250 + 200 = 450$

$\%\ Profit = \frac{\%\ Profit}{CP} \times 100$

$= \frac{450}{200} \times 100$

$2)450$

$4\downarrow$

05

-4

1

200 → 250 : ↑ 50%.

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

$= 25\%$

47] SP = 720 at 20%.

$\frac{20}{100} \times 720$

$\frac{14400}{100} = 144 \rightarrow$ (Profit)

$SP = CP \times \frac{(100 + \%\ gain)}{100}$

$720 = CP \times \frac{(100+20)}{100}$

$720 \times 100 = CP \times 120$

$\frac{72000}{120} = CP$

$CP = 600$

48] CP = 500, loss = 15%, SP = ?

$SP = CP \times \frac{(100 - \%\ loss)}{100}$

$SP = 500 \times \frac{(100-15)}{100}$

$= 500 \times \frac{85}{100}$

$SP = 425$

49] CP = 1500 & loss = 10%. SP = ?

$$SP = CP \times \frac{(100 - \%\ loss)}{100}$$

$$= 1500 \times \frac{(100 - 10)}{100}$$

$$= 1500 \times \frac{90}{100}$$

$$= 1350$$

50] CP = 100 of 30%.

100 ↑ 30% = 130

CP = 130

130 ↓ 10% = 130 − 13 = 117

SP = 117

$$\text{Profit \%} = \frac{SP + CP}{CP} \times 100$$

$$= \frac{117 + 130}{130} \times 100$$

$$= \frac{147}{130} \times 100 = \frac{1470}{13}$$

$$\text{Profit \%} = \frac{117 - 100}{100} \times 100$$

$$= 17\%.$$