

$$1 \quad \frac{25}{100} \times 200 = 50$$

$$2 \quad \frac{30}{100} \times x = 90$$

$$x = 200$$

$$3 \quad \frac{75}{100} x = 150$$

$$x = 200$$

$$4 \quad \frac{15}{100} \times 120 = 18$$

$$\begin{array}{r} 15 \\ \times 12 \\ \hline 180 \end{array}$$

$$5 \quad \frac{30}{100} \times x = 90$$

$$x = 300$$

$$6 \quad \text{Incr} 250 - 200 = 50$$

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

$$7 \quad \text{Increase} = 50000 - 40000 = 10000$$

$$\% = \frac{10000 \times 100}{40000} = 25\%$$

$$8 \quad \text{decreas} 10000 - 8000 = 2000$$

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

$$9 \quad \text{decrease} = 500 - 400 = 100$$

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

$$10 \quad CP = 600$$

$$SP = 450$$

$$\text{Loss} = CP - SP = 600 - 450 = 150$$

$$\text{Loss \%} = \frac{150}{600} \times 100 = 25\%$$

$$11 \quad \frac{30}{100} \times 400 + 2000 \quad \frac{40}{100} \times 300 = 190$$

Both are equal

$$12 \quad \frac{6}{5}x = \frac{3}{5}x$$

$$\text{Money left} = x - \frac{3}{5}x = \frac{2}{5}x$$

$$\frac{2}{5}x = 8000$$

$$x = 20,000$$

$$13 \quad A = \cancel{120} \quad B = 100$$

$$\text{DECIDE } A = 120x$$

$$A = 120$$

$B = y\%$ less than A

$$3) \cancel{\frac{50}{3}} \quad \cancel{\frac{20}{3}} \\ \underline{-} \quad \underline{-} \\ \underline{\underline{16}}$$

$$A = 62x$$

$$B = \frac{120 - 100}{120} \times 100\%$$

$$= \frac{20}{120} \times 100 = \frac{50}{3}$$

$$= 16\frac{2}{3}$$

14 ~~Revert~~ ~~+ 25%~~ Exp. = $P \times Q$

$$P' = P + 0.25 P$$

$$= 1.25P$$

$$\text{New Exp} = P' \times Q'$$

$$P' \times Q' = P \times Q$$

$$1.25P \times Q' = P \times Q$$

$$1.25 Q' = Q$$

$$Q' = \frac{Q}{1.25} = Q \times \frac{4 \times 2}{5 \times 2} = 0.8Q$$

$$\text{Reduction} = Q - Q' = Q - 0.8Q = 0.2Q$$

$$\% = \frac{0.2Q}{Q \times 100} \times 100\% = 20\%$$

15. $A = \frac{140}{100}$ $B = 100$

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

$$= \frac{40}{140} \times 100 = \frac{200}{7}$$

$$B \Rightarrow 28.57\%$$

$$\begin{array}{r} 28.57 \\ 7) 209 \\ \underline{- 14 } \\ 69 \\ \underline{- 56} \\ 13 \\ \underline{- 14} \\ 50 \end{array}$$

16 Anetial Price = 100

increase = 20%

$$NP = \frac{100}{6} \times 100(1 + 20\%) \frac{120}{100}$$

decrease by 10% = $\frac{120}{100} - \frac{120 \times 10}{100}$
= 108

$$\text{Profit} = \frac{108 - 100}{100} \times 100 = 8\% \text{ inc}$$

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17 Num = 100
 increase = 30%
 I N = 130
 decrease = $130 - \frac{130 \times 20}{100} = 104$
 Profit % = $\frac{17}{100} \times 100 = 17\%$ $\frac{4}{100} \times 100 = 4\%$ increase

18 P = 100
 NP = 125
 decrease = $125 - \frac{125 \times 25}{100} = 100$

~~140~~
~~42~~
~~98~~
 0% ~~14~~
~~3~~
~~48~~
 2%

19 P = 100
 NP = 140
 decrease = $140 - \frac{140 \times 30}{100} = 98$

loss = $\frac{2}{100} \times 100 = 2\%$ decrease

20 S = 100

NS = 120

decrease = $120 - \frac{120 \times 10}{100} = 108$

Profit = $\frac{8}{100} \times 100 = 8\%$

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

Profit = SP - CP

SP = 100%

Profit 20%

CP = $SP - \frac{\text{Profit}}{100}$
 $= 100 - \frac{20}{100}$

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

~~20~~ = 33.33%

~~2100 85~~

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

$$SP = \frac{100 + 25 \times CP}{100}$$

$$SP = \frac{125}{100} CP$$

$$SP = 125 \cdot CP$$

~~22. MP = 500~~

$$SP = \frac{500 \times 90}{100} = 450$$

$$CP = \frac{100}{(100+8)} \times 450$$

$$= \frac{100}{108} \times \frac{450}{50} = 1250$$

$$\begin{array}{r} +2 \\ -3 \\ \hline 12 \\ \hline 3 \end{array}$$

$$CP = 416.67$$

$$3) \begin{array}{r} 1250 \\ 121 \\ \hline 45 \\ \hline 3 \\ \hline 20 \\ \hline 18 \\ \hline 2 \end{array}$$

$$SP = \left(\frac{100 + \frac{20}{100} CP}{100} \right) CP$$

~~$SP = 120 \text{ } \phi$~~

$$= \frac{120}{100} CP^2$$

$$Q3, \text{ Profit} = SP - CP : \underline{\underline{SP = 20x}}_{\cancel{x100}} + 20$$

$$\frac{20}{100} CP \Rightarrow SP - CP$$

$$\frac{80}{100} CP + CP = SP \quad 0.80 = \frac{5}{6} \times 100$$

$$\frac{20 \text{ CPT} + 100 \text{ CP}}{100} = \text{SP}$$

$$\text{SP} = \frac{120 \text{ CP}}{100}$$

$$\begin{array}{r} 11 \\ \times 280 \\ \hline 960 \end{array}$$

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24 CP = 1200
SP = 960

$$\begin{aligned} \text{Loss} &= CP - SP \\ &= 1200 - 960 \\ &= 240 \end{aligned}$$

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

25 CP = 500 SP = 650

$$\begin{aligned} \text{Profit} &= 150 \\ \text{Profit \%} &= \frac{150}{500} \times 100 = 30\% \end{aligned}$$

26 A = LB + $\frac{100B}{100}$

A = 120

B = 100

$$\begin{aligned} B &= \frac{120 - 100}{120} \times 100 \\ &= \frac{20}{120} \times 100 = 16.67 \end{aligned}$$

b G

27 3:2

$$\frac{3}{\$1} \times \frac{20}{100} = 60\%$$

28 $250,000 - 200,000$ Increase ~~50,000~~

$$\text{increas \%} = \frac{\$50,000}{\$200,000} \times \frac{100}{100} = 25\%$$

29 total Vote = λe

$$\underline{65\% \lambda e} - 35\% \lambda e = 3000$$

$$\frac{30}{100} \lambda e = 3000$$

$$\lambda e = 10000$$

$$\frac{70}{100}$$

30 ~~42.85%~~

$$\frac{40}{70} \times \frac{100}{100} - 100$$

$$\frac{28}{70} \times \frac{1000}{100} - 100$$

$$\frac{18}{70} \times \frac{1000}{100} - 100 = \frac{300}{7} = 42.85\%$$

~~60~~~~56~~~~40~~

30

$$\textcircled{2} \quad \begin{array}{r} 75 \\ \times 5 \\ \hline 375 \end{array}$$

$$\textcircled{3} \quad \begin{array}{r} 15 \\ \times 5 \\ \hline 75 \end{array}$$

$$\begin{array}{r} 14 \\ \times 5 \\ \hline 70 \end{array}$$

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31 Number = 100

NP = 150

Then decrease = $150 - \frac{150 \times 5\%}{100} = 65.$

Loss % = $\frac{100 - 65}{100} \times 100 = 35\%.$

Decrease = $150 - \frac{150 \times 5\%}{100} = 75$

Loss % = $\frac{100 - 75}{100} \times 100 = 25\%$

32. $A = 120\%$
 $B = 100$

$B = \frac{120 - 100}{120} \times 100 = 16.67\%$

33. $\frac{2\%}{10\%} \times = 90$
 $2e = 300$

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

34. $\frac{75}{100}x - \frac{3}{4}x = 5000$

$$x - \frac{3}{4}x = 5000$$

$$\frac{x}{4} = 5000$$

$$x = 20,000$$

35. $Exp = P \times \varphi$

$$P' = P + \frac{\alpha \varphi}{100} P$$

$$P' = P + 0.2P = 1.2P$$

$$P' \times \varphi' = P \times \varphi$$

$$1.2P \times \varphi' = P \times \varphi$$

$$1.2\varphi' = \varphi$$

$$\varphi' = \frac{\varphi}{1.2} = \frac{5}{12} \varphi$$

$$\text{Reduction} = \varphi - 0.83\varphi$$

$$= 0.17\varphi$$

36. Price = 100

NP = 120

$$\text{decrease} = 120 - \frac{120 \times 10}{100} = 108.$$

$$\text{Profit} = \frac{8}{100} \times 100 = 8\%$$

37. ~~CPG~~

MP = 25% above CP

discount = 20%

CP = 100₹

$$\begin{aligned} MP &= 100₹ \times 125\% \\ &= 125₹ \end{aligned}$$

$$SP = 125₹ \left[\frac{100-20}{100} \right]$$

$$= 125₹ \times \frac{80}{100} = 100₹$$

$$\text{① } \Rightarrow 100₹ - 100₹ = 0\%, 0\%$$

38. $CP = 500$

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

SP

$$SP = \left(\frac{100 + \text{Loss \%}}{100} \right) \times CP$$

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

$$= 80 \times 5 = 400$$

39

$$\text{Salary} = 100$$

$$NS = 110$$

$$\text{decrease} = 110 - \frac{110 \times 10}{100}$$

$$= 110 - 11 = 99$$

$$\text{loss} = \frac{1}{100} \times 100 = 1\% \text{ decrease}$$

40

$$\frac{1000}{100} \times \frac{60}{100} x = 220$$

$$x = 550$$

41

$$\text{Salary} = x$$

$$x - \left(\frac{20}{100}x + \frac{30}{100}x + \frac{10}{100}x \right) = 18000$$

$$x - \frac{6}{10}x = 18000$$

$$\frac{4x}{10} = 18000$$

$$x = 45000$$

12800
39
91

13
34

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42 OP = 100

NP = 130

decrease = $130 - \frac{130 \times 36}{100} = 91$

Loss = $\frac{100 - 91}{100} \times 100\% = 9\%$

43 ~~year~~ 10,000 $\times \frac{10}{100} = 1000$

$\frac{10000}{1000} = 11000$

2 year = $11000 \times \frac{10}{100} = 1100$

$\frac{11000}{1100} = 10$

3 year = $12100 \times \frac{10}{100} = 1210$

12100
1210
13310

$$\underline{44.} \quad \frac{3}{100} A = \frac{4}{100} B$$

$$\frac{A}{B} = \frac{4}{3}$$

$$A:B = 4:3$$

$$\underline{45.} \quad CP = 800 \\ Profit = 25\%$$

$$\begin{array}{r} \textcircled{2} \textcircled{4} \\ 125 \\ \hline 1000 \end{array}$$

$$SP = \left(\frac{100+25}{100} \right) 800 \\ = 125 \times 8 = 1000$$

$$\underline{46.} \quad CP = 200 \\ SP = 250$$

$$Profit = \left(\frac{250-200}{200} \right) \times 100 \\ = \frac{50}{200} \times 100 = 25\%$$

$$\underline{47.} \quad \textcircled{100} \\ SP = \left(\frac{100+P\%}{100} \right) \textcircled{100} CP$$

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

$$\frac{72000}{1120} = CP \quad CP = 600$$

12
20
36
48
60
72

~~425~~

48 CP = ₹ 500
Loss = 15%.

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

$$= 85 \times 5 = 425$$

49 CP = ₹ 1500
Loss = 10%.

$$SP = \frac{90}{100} \times 1500 = 1350$$

(4)
15
135

50 30% above the CP & discount of 10%.
gain Percent = ?

MP = 30% above CP
discount = 10%.

$$CP = 100\text{₹}$$

$$MP = 130\text{₹}$$

$$SP = 130\text{₹} \left(\frac{100 - 10}{100} \right)$$

$$= 130\text{₹} \times \frac{90}{100} = 117\text{₹}$$

$$\text{Gain} = \frac{117\text{₹} - 100\text{₹}}{100\text{₹}} = 17\%$$