

$$Q1 = 25\% \text{ of } 200$$

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

$$\underline{\underline{b. 50}}$$

$$Q2. 40\% \text{ of } 80$$

~~$$\frac{40}{100} \times 80 = 32$$~~

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

$$x = \frac{80}{\frac{4}{10}}$$

$$x = \frac{80}{0.4}$$

$$x = 200$$

$$\underline{\underline{C = 200}}$$

Q3 = 75% of num is 150

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

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

$$x = 200$$

$$\underline{\underline{b = 200}}$$

Q4 = 15% of 120

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

$$\underline{\underline{c = 18}}$$

Q5 30% of num is 90

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

$$x = \frac{90}{0.3}$$

$$x = 300$$

$$c = 300$$

Q6. price of product increase from 200 to 250

$$I = 250 - 200 \\ = 50$$

$$\text{increase} = \frac{50}{200} \\ = 0.25$$

$$P = \cancel{0.25} \times 100 \\ = 25\%$$

Q7 salary inc from 40,000 to 50,000

$$I = 50000 - 40000 \\ = 10000$$

$$\text{Increase} = \frac{10000}{40000} \\ = \frac{1}{4} = 0.25$$

$$P = 0.25 \times 100 \\ = 25\%$$

$$\text{Q8. decrease} = 10000 - 8000 \\ = 2000$$

$$d = \frac{2000}{10000} \\ = \frac{2}{10} = 0.2$$

$$p = 0.2 \times 100 \\ = \underline{\underline{20\%}}$$

$$\text{Q9} \quad \text{price drop} = 500 - 400 \\ = 100$$

$$d = \frac{100}{500} \\ = \frac{1}{5} = 0.2$$

$$p = 0.2 \times 100 \\ = \underline{\underline{20\%}}$$

$$\text{Q10} \quad CP = 600 \quad SP = 450$$

$$d = 600 - 450 \\ = 150$$

$$D = \frac{150}{600} \\ = \frac{1}{4} = 0.25$$

$$p = 0.25 \times 100 \\ = \underline{\underline{25\%}}$$

Q11. 30% of 400

$$= \left(\frac{30}{100} \right) \times 400$$

$$= 120$$

40% of 300

$$= \left(\frac{40}{100} \right) \times 300$$

$$= 0.40 \times 300$$

$$= 120$$

Both are equal

Q12

Saving Percentage = 100% - 60% = 40%

$$40\% = 8000$$

$$= \left(\frac{40}{100} \right) \times x = 8000$$

$$= 0.40 \times x = 8000$$

$$= x = \frac{8000}{0.40}$$

$$x = \underline{\underline{20000}}$$

Q13

A is 20% more than B

let B = 100 A = 120

$$D = 120 - 100 = 20$$

$$Pl = \left(\frac{20}{120} \right) \times 100$$

$$= \underline{\underline{16.67}}$$

Q14

$$\begin{aligned}\text{Percentage Reduce} &= \left(\frac{25}{(100+25)} \right) \times 100 \\ &= \left(\frac{25}{125} \right) \times 100 \\ &= \boxed{20\%}\end{aligned}$$

Q15 40% more than B

$$\begin{aligned}PL &= \left(\frac{40}{100+40} \right) \times 100 \\ &= \frac{40}{140} \times 100 \\ &= \underline{\underline{28.57\%}}\end{aligned}$$

Q16. original = 100

$$\begin{aligned}\text{increase by } 20\% &: 100 + \left(\frac{20}{100} \right) \times 100 \\ &= 120\end{aligned}$$

$$\begin{aligned}\text{increase by } 10\% &: 120 - \left(\frac{10}{100} \right) \times 120 \\ &= 120 - 12 \\ &= 108\end{aligned}$$

$$\begin{aligned}\text{Net Change} &= 108 - 100 \\ &= 8\end{aligned}$$

8% increase

Q17. let $N=100$

$$\text{incr } 30\% = 100 + \left(\frac{30}{100}\right) \times 100$$

$$= 130$$

$$\text{incr } 20\% = 130 - \left(\frac{20}{100}\right) \times 130$$

$$= 130 - 26$$

$$= 104$$

$$\text{Net change} = 104 - 100$$

$$= 4$$

4% increase

Q18. let $p=100$

$$\text{Incr } 25\% = 100 + \left(\frac{25}{100}\right) \times 100$$

$$= 125$$

$$\text{Incr } 20\% = 125 - \left(\frac{20}{100}\right) \times 125$$

$$= 100$$

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

$$= 0$$

0%

Q19. let $P=100$

$$\text{Incr } 40\% = 100 + \left(\frac{40}{100}\right) \times 100 \\ = 140$$

$$\text{Incr by } 30\% = 140 - \left(\frac{30}{100}\right) \times 140 \\ = 140 - 42 \\ = 98$$

$$\text{Net change: } 98 - 100 \\ = 2$$

$$\text{Net change} = \underline{\underline{2\% \text{ decrease}}}$$

Q20. let $S=100$

$$\text{Incr } 20\% : 100 + \left(\frac{20}{100}\right) \times 100 \\ = 120$$

$$\text{Net change} = 108 - 100 \\ = 8$$

$$\text{Incr } 10\% = 120 - \left(\frac{10}{100}\right) \times 120$$

$$= 120 - 12 \\ = 108$$

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

Q21 $CP=100\%$

Profit : 25%

$$SP = 100\% + 25\% \\ = 125\%$$

$$SP = \underline{\underline{125\%}}$$

Q22

$$SP = MP - Dis$$

$$\begin{aligned} \text{Discount} &= 10\% \text{ of } 500 \\ &= \left(\frac{10}{100}\right) \times 500 \\ &= 50 \end{aligned}$$

$$\begin{aligned} SP &= 500 - 50 \\ &= 450 \end{aligned}$$

$$\text{Cost price} = 450 = x + \left(\frac{8}{100}\right) \times x$$

$$450 = x (1 + 0.08)$$

$$450 = 1.08x$$

$$x = \frac{450}{1.08}$$

$$\begin{aligned} x &= \cancel{\text{₹}} 416.67 \\ &= \underline{\underline{420}} \end{aligned}$$

Q23 let CP be 100

$$\begin{aligned} \text{Profit} &= 20\% \text{ of } 100 \\ &= 20 \end{aligned}$$

$$\begin{aligned} SP &= CP + \text{Profit} = 100 + 20 \\ &= 120 \end{aligned}$$

$$\begin{aligned} PP &= \left(\frac{20}{120}\right) \times 100 \\ &= \underline{\underline{16.67}} \end{aligned}$$

Q24

$$\text{Discount} = 1200 - 960 \\ = 240$$

$$\text{Percentage Dis} = \left(\frac{240}{1200} \right) \times 100 \\ = \underline{\underline{20\%}}$$

Q25). Profit = 650 - 500
= 150

$$\text{Perc Profit} = \left(\frac{150}{500} \right) \times 100 \\ = \underline{\underline{30\%}}$$

Q26

let B = 100 A = 120

$$120 - 100 \\ = 20$$

$$Pl = \frac{20}{120} \times 100 \\ = 16.67$$

Q27 ratio = 3 + 2 = 5

$$\text{Percentage boys} = \left(\frac{3}{5} \right) \times 100 \\ = \underline{\underline{60\%}}$$

Q28

Incr = 250000 - 200000
= 50,000

$$\text{Perc Incr} = \left(\frac{50000}{250000} \right) \times 100 \\ = \underline{\underline{25\%}}$$

Q29 = Cand A = 65% B = 35%

$$\text{Diff} = 65 - 35 \\ = 30\%$$

$$\text{Vote } 30\% = 3000$$

$$\text{Total Vote} = \frac{3000}{0.30} \\ = \underline{\underline{10000}}$$

Q30. Percentage increase = $\left(\frac{30}{100-30}\right) \times 100$

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

$$= \underline{\underline{42.85\%}}$$

Q31 let N = 100

$$\text{incr } 50\% \text{ of } 100 = 150$$

$$\text{dec by } 50\% = 150 - \frac{50}{100} \times 150$$

$$= 75$$

$$\text{Net change} = 75 - 100 \\ = \underline{\underline{25\% \text{ decrease}}}$$

Q32

A 20% taller than B

$$\begin{aligned} 120 - 100 \\ = 20 \end{aligned}$$

$$Pl = \frac{20}{120} \times 100$$

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

Q33 If 30% is 90

$$\begin{aligned} 10\% &= \frac{90}{3} \\ &= 30 \end{aligned}$$

$$\begin{aligned} \text{Therefore } 60\% \text{ is } 30 \times 6 \\ = 180 \end{aligned}$$

$$\underline{\underline{180}}$$

Q34 Spend 75%.

$$\begin{aligned} &= 100\% - 75\% \\ &= 25\% \end{aligned}$$

$$25\% \text{ of income} = 5000$$

$$\text{Total} = \frac{5000}{\left(\frac{25}{100}\right)} = 5000 \times 4 = 20000$$

$$\underline{\underline{₹ 20000}}$$

Q35. 20% increase

$$\text{let } 120 - 100 = 20$$

$$\text{Consumption reduce} = \frac{20}{120} \times 100$$
$$= 16.67\%$$

$$\underline{\underline{16.67\%}}$$

Q36 Initial price = $100 + \cancel{20}$

$$= 120$$

$$\text{incr by } 20\% = 100 + 20$$
$$= 120$$

$$\text{decr by } 10 = 120 - \cancel{12}$$
$$= 108$$

$$\text{Net change} = 108 - 100$$
$$= 8$$

$$\text{Percent change} = \left(\frac{8}{100} \right) \times 100$$

= 8% increase

Q37. let CP = 100

$$\text{MP} = 100 + 25 = 125$$

$$\text{Discount } 20\% = \left(\frac{20}{100} \right) \times 125$$
$$= 25$$

$$\text{SP} = 125 - 25 = 100$$

$$\text{Profit} = 100 - 100$$
$$= \underline{\underline{0}}$$

938

$$CP = 500 \quad \text{loss} = 20\%$$

$$\text{loss} = \frac{20}{100} \times 500$$

$$= 100$$

$$SP = 500 - 100$$

$$= \underline{\underline{400}}$$

Q39

let sal 100

$$\text{incr by } 10\% = 100 + 10$$

$$= 110$$

$$\text{Decr by } 10\% = 110 - \left(\frac{10}{100}\right) \times 110$$

$$= 110 - 11$$

$$= 99$$

$$\text{Net change} = 1$$

1% decrease

Q40

Passing No 40%

$$\text{Passing marks} = 200 + 20$$

$$= 220$$

$$40\% \text{ of total marks} = 220$$

$$\frac{220}{(40/100)} = 220 \times \left(\frac{100}{40}\right)$$

$$= \underline{\underline{550}}$$

$$\text{Q41. Total per} = 20 + 30 + 10$$

$$= 60\%$$

$$\text{Saving per} = 100 - 60$$

$$= 40$$

$$40\% \text{ of Salary} = 188000$$

$$\text{Total Sal} = \frac{180000}{\left(\frac{40}{100}\right)}$$

$$= \underline{\underline{45000}}$$

$$\text{Q42. let cost be } 100$$

$$\text{Incr } 30\% = 100 + 30$$

$$= 130$$

$$\text{Deer } 30\% = 130 - \left(\frac{30}{100}\right) \times 130$$

$$= 130 - 39$$

$$= 91$$

$$\text{Net change : } 91 - 100$$

$$= 9$$

$$\text{Net percentage change} = \underline{\underline{9\% \text{ decrease}}}$$

$$\text{Q43. 1st year} = 10000 \times 1.10$$

$$= 11000$$

$$2^{\text{nd}} \text{ year} = 11000 \times 1.10$$

$$= 12100$$

$$3^{\text{rd}} \text{ year} = 12100 \times 1.10 =$$

$$\underline{\underline{13310}}$$

Q44 $15\% \text{ of } A = 20\% \text{ of } B$

$$0.15A = 0.20B$$

$$\frac{A}{B} = \frac{0.20}{0.15} = \frac{20}{15} = \frac{4}{3}$$

$$A:B = \underline{\underline{4:3}}$$

Q45 Profit = $\left(\frac{25}{100}\right) \times 800$
 $= 200$

$$SP = 800 + 200$$
$$= \underline{\underline{1000}}$$

Q46. Profit = $250 - 200$
 $= 50$

$$\text{Profit percentage} = \left(\frac{50}{200}\right) \times 100$$
$$= \underline{\underline{25\%}}$$

Q47 CP = x
 $1.20x = 720$

$$x = \frac{720}{1.20}$$
$$= \underline{\underline{600}}$$

Q48.

$$\text{Loss} = \frac{15}{100} \times 500 \\ = 75$$

$$\text{SP} = 500 - 75 \\ = \underline{\underline{425}}$$

Q49

$$\text{Loss} = \left(\frac{10}{100}\right) \times 1500 \\ = 150$$

$$\text{SP} = 1500 - 150 \\ = \underline{\underline{1350}}$$

Q50 let $P = 100$

$$\text{MP} = 130$$

$$\text{Discount} = 10\% \text{ of } 130 \\ = 13$$

$$\text{SP} = 130 - 13 \\ = 117$$

$$\text{Gain} = 117 - 100 \\ = 17$$

$$\text{Gain percentage} = \underline{\underline{17\%}}$$