

Percentage & Profit & Loss

1. $\left(\frac{25}{100}\right) \times 200 = 50$

2. $40\% \text{ of } x = 80 \Rightarrow \frac{40}{100} \times x = 80 \Rightarrow x = 80 \times \left(\frac{100}{40}\right) = 200$

(c) 200

3. $\frac{75}{100} x = 150 \Rightarrow x = \left(\frac{150 \times 100}{75}\right) = 200$

(b) 200

4. $\left(\frac{15}{100}\right) \times 120 \Rightarrow$ (c) 18

5. $\frac{30}{100} x = 90 \Rightarrow x = \left(\frac{90 \times 100}{30}\right) = 300$

₹ 7300

$$6. \quad \% \text{ increase} = \left(\frac{250 - 200}{200} \right) \times 100 = \frac{25}{100} = (25)\%$$

$$7. \quad \% \text{ increase} \rightarrow \text{Decrease} = \frac{(\text{Original population}) - (\text{New population})}{(\text{Original})} \times 100$$

$$\Rightarrow \frac{(10,000 - 8,000)}{(10,000)} \times 100 = \frac{20}{100} = (20)\% \rightarrow (c)$$

$$8. \quad \% \text{ decrease} = \left(\frac{500 - 400}{500} \right) \times 100 = \frac{20}{100}$$

$$\Rightarrow (c) 20\%$$

$$9. \quad \text{Population decrease} = \frac{(\text{Cost price} - \text{Selling price})}{\text{Cost price}} \times 100$$

$$\Rightarrow \left(\frac{150}{600} \right) \times 100 = (c) 25\%$$

$$11. \quad \left(\frac{30}{100} \times 400 \right) = 120$$

$$\left(\frac{40}{100} \right) \times 300 = 120$$

(c) Both equal

12. 40% left

$$\text{Total income} = \left(\frac{40}{100} \right) x = 8000$$

$$x \Rightarrow \left(\frac{8000 \times 100}{40} \right) = (20,000)$$

(c) [c]

$$13. \text{ Let } B = 100, A = 120$$

$$D = 120 - 100 = 20$$

$$\% \text{ less} = \left(\frac{20}{120} \right) \times 100 = 16.67\%$$

(b)

$$14. \text{ Reduction} = \left(\frac{25}{125} \right) \times 100 = 20\%$$

(d)

15. $B = 100, A = 140, D = 140 - 100 = 40$

$\% = \frac{40}{100} \times 100 = (28.5\%)$

\Rightarrow (a)

16. Net change = $\left[20 - 10 - \frac{(20 \times 10)}{100} \right]$

\therefore Net change = $9 = 8\%$ (a)

17. Net change = $\left[30 - 20 - \frac{(30 \times 20)}{100} \right]$

\therefore Net change = 4% increase (a)

18. Net change = $\left[25 - 20 - \frac{(25 \times 20)}{100} \right]$

$= 5\%$ decrease \rightarrow (d)

19. Net change = $\left[40 - 30 - \frac{(40 \times 30)}{100} \right]$

$= 2\%$ increase

(a)

$$(20) \Rightarrow \left[20 - 10 - \frac{(20 \times 10)}{100} \right] = 8\% \text{ increase}$$

$$21 \quad SP = 100\% + 25\% = (125\%) CP$$

$$22 \quad SP = MP \times (1 - DP) = 500 \times (1 - 0.10) = 450$$

$$\Rightarrow \left(\frac{450}{1 + 0.08} \right) = \left(\frac{450}{1.08} \right) = (416.67)$$

$$(5) \quad \text{Answer} = 4\%$$

(None of the above)

$$23 \quad SP = CP + \text{Profit} = 120$$

$$\% \text{ Profit} = \left(\frac{20}{120} \right) \times 100 = 16.67\%$$

(a)

24 Dis count = $(1200 - 960) = 240$

$$\% \text{ discount} = \left(\frac{240}{1200} \right) \times 100$$

$$= \underline{(6)} \text{ (20\%)} \quad \text{①}$$

25 Profit = $(650 - 500) = 150$

$$\% \text{ profit} = \left(\frac{150}{500} \right) \times 100$$

$$= (30)\%$$

②

26 $\% \text{ less} = \left(\frac{20}{120} \right) \times 100 = (16.67\%)$

②

27 Total p ords = $3 + 2 = 5$

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

②

25. $2,50,000 - 2,00,000 = 50,000$

$$\% \text{ increase} = \left(\frac{50,000}{2,00,000} \right) \times 100$$

$$= (25)\%$$

(6)

29. Total sales = x

$$A : 65\% \text{ of } x$$

$$\text{Diff} = (65\% \text{ of } x) - (35\% \text{ of } x)$$

$$= 3,000$$

$$\Rightarrow x = \left(\frac{3,000 \times 100}{30} \right)$$

$$= 10,000$$

(7)

32. Let Orig. price = 100

new price after reduction $\rightarrow 70$

$$\text{Required increase} = \left(\frac{100 - 70}{70} \right) \times 100$$

$$= (42.85\%) \quad (6)$$

31. after increase, 150

$$\text{after decrease, } (50\% \text{ of } 150) = (150 - 75) = 75$$

$$\% \text{ change} = \left(\frac{100 - 75}{100} \right) \times 100$$

$$= (25)\% \quad (6)$$

32. $A = 100 + 20 = 120$

$$\text{Diff.} = (120 - 100) = 20$$

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

$$= 16.67\%$$

(a)

33. $\left(\frac{30}{100} \right) x = 90 \Rightarrow x = \left(\frac{90 \times 100}{30} \right)$

$$x = 300 - 120$$

$$= 180 \quad (c)$$

34

Total income = ₹

$$\Rightarrow \left(\frac{25}{100} \right) x = 5,000$$

$$\Rightarrow x = \left(\frac{5,000 \times 100}{25} \right)$$

$$= 20,000$$

(C)

35

$$\% \text{ reduction} = \left(\frac{20}{100 + 20} \right) \times 100 = (6.67)\%$$

(C)

36

After 10% decrease,

$$120 - \left(\frac{10}{100} \times 120 \right) = (120 - 12)$$

$$= 108$$

$$\text{Net change} = (108 - 100)$$

$$= (8)$$

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

$$= 8\%$$

(C)

37. Market price = $100 + \left(\frac{25}{100} \times 100 \right)$

(1) $125 - \left(\frac{25}{100} \times 125 \right)$

Selling price = $(125) - \left(\frac{25}{100} \times 125 \right)$
= 100

$\left(\frac{P}{Z} \right) = (SP - CP) = 100 - 100$
= 0%

[a]

38. $SP = 500 - \left(\frac{20}{100} \times 500 \right) = 500 - 100 = 400$

[c]

39. After 10% increase, $100 + 10 = 110$

After 10% decrease, $110 - \left(\frac{10}{100} \times 110 \right)$

= $110 - 11 = 99$

Net change = $99 - 100 = (-1)$

(1) decrease

[b] 1% decrease

40 Let total marks be (x)

$$\text{Marks for pass} = 40\% (x)$$

$$40\% x = 250 + 20 = 270$$

$$x = \left(\frac{270 \times 100}{40} \right)$$

$$= 675$$

(6)

41 Savings = 100% = (20% + 30% + 10%)

$$= (40\%) \text{ of } x = 18,000$$

$$\Rightarrow x = (45,000) \quad (6)$$

42 After (30%) increase

$$\Rightarrow 100 + \left(\frac{30 \times 100}{100} \right) = 130$$

$$\Rightarrow \text{Decrease} : (130 - 39) = 91$$

$$\text{Net change} = (100 - 91) = 9 \text{ decrease}$$

$$\text{Overall \% change} = \left(\frac{9}{100} \right) \times 100 = (9\%) \text{ decrease}$$

(6)

43. Population after 1 year = $(10,000) +$
 $(10\% \text{ of } 10,000)$
 $= (11,000)$
 $+$
 $(10\% \text{ of } 11,000)$
 $= (12,100)$
 $+$
 $(10\% \text{ of } 12,100)$
 $= (13,310)$
(a)

44. $A = \left(\frac{20}{100}\right) \times B = \left(\frac{15}{100}\right) \times A = \left(\frac{20}{100}\right) \times B$
 $\Rightarrow A = \left(\frac{20}{11}\right) \times B = (4:5)$
(b)

45. $SP = (CP + \text{profit}) = (800 + \frac{25}{100} \times 800)$
 $= (6000)$
(b)

46

$$\text{Profit} = (\text{SP} - \text{CP}) = (250 - 200) = 50$$

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

(b)

47

$$\text{SP} = (\text{CP} + \text{profit})$$

$$= \text{CP} \times \left(1 + \frac{20}{100} \right)$$

$$\text{Let CP} = x$$

$$720 = x \times 1.2$$

$$\Rightarrow x = \frac{720}{1.2} = (600) \quad (9)$$

48

$$\text{SP} = (\text{CP} - \text{Loss}) = \text{CP} \times \left(1 - \frac{15}{100} \right)$$

$$\text{SP} = 500 \times (1 - 0.15)$$

$$= (425)$$

(b)

$$49 \quad SP = CP \times \left(1 - \frac{\text{Loss}}{\text{Percentage}} \right)$$

$$SP = 1500 \times \left(1 - \frac{10}{100} \right) = (1500 \times 0.9)$$

$$= (1350) \quad \textcircled{c}$$

$$50 \quad \text{Marked price} = 100 + \frac{30}{100} (100)$$

$$SP = 130 - \left(\frac{10}{100} \right) 130 = (130 - 13) = 117$$

$$\text{Profit} = (SP - CP) = (117 - 100) = 17$$

$$\% \text{ Profit} = \left(\frac{\text{Profit}}{CP} \right) \times 100$$

$$= \left(\frac{17}{100} \right) \times 100$$

$$= (17)\%$$

$$\textcircled{a}$$