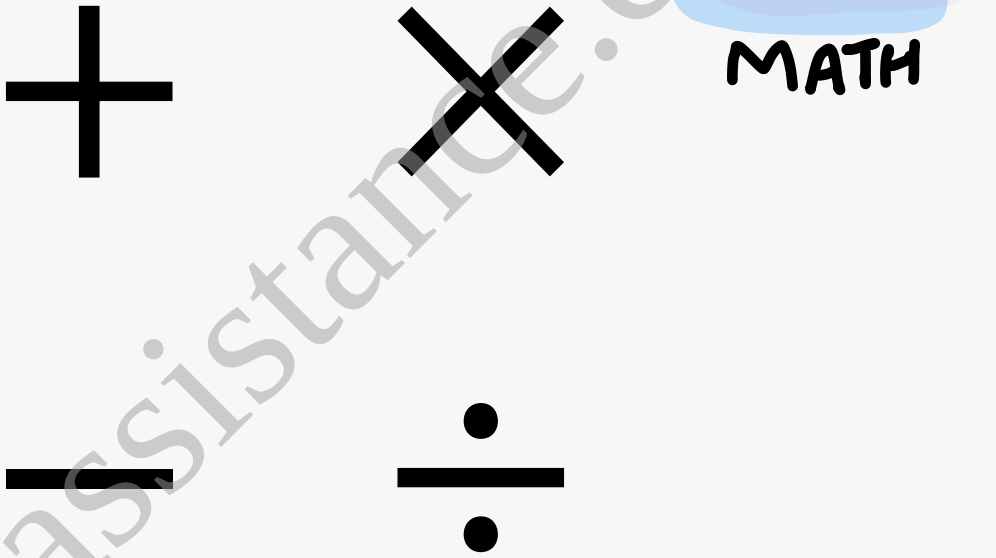
Percentage And Its Applications
Ex. 8.3



Exc. 8.3

1. C.P. of pen = ₹ 30

Profit = 20 %

S.P. of pen = $\left(\frac{100 + P.\%}{100}\right) \times C.P.$

$= \left(\frac{100+20}{10\cancel{0}}\right) \times 3\cancel{0}$

$= \frac{12\cancel{0}}{1\cancel{0}} \times 3$

$= ₹ 36$

M.P. of pen = ₹ 40

discount = M.P. − S.P.

= 40 − 36

= ₹ 4

$D.\% = \frac{D}{M.P.} \times 100$

$= \frac{4^{1}}{4\cancel{0}_{1}} \times 10\cancel{0}$

= 10 %

2 List price of bicycle = ₹ 5200

Discount = 20 %

Selling price of bicycle = $\left(\frac{100 - D.\%}{100}\right) \times L.P.$

$= \left(\frac{100-20}{10\cancel{0}}\right) \times 52\cancel{00}$

= 80 × 52

= ₹ 4160

Amount spent on transportation = ₹ 200

Amount spent on repairs = ₹ 154

C.P. of bicycle for Ravi = 4160 + 200 + 154

= ₹ 4514

Profit = 8·1.

S.P. of bicycle for Ravi = $\left(\frac{100 + P.I.}{100}\right) \times C.P.$

$= \left(\frac{100+8}{100}\right) \times 4514$

$= \frac{\cancel{108}^{27}}{\cancel{100}_{25}} \times 4514$

$= \frac{121878}{25}$

= ₹ 4875.12

3. C.P. of jeans = ₹ 900

Profit = 15·1

S.P. of jeans = $\left(\frac{100 + P.I.}{100}\right) \times C.P.$

$= \left(\frac{100+15}{\cancel{100}}\right) \times 9\cancel{00}$

$= 115 \times 9$

= ₹ 1035

Let M.P. of jeans = ₹ 100

Discount = 15·1.

S.P. of jeans = $\left(\frac{100 - D.I.}{100}\right) \times M.P.$

$= \left(\frac{100-15}{\cancel{100}_1}\right) \times \cancel{100}^1$

= ₹ 85

If the S.P. of jeans is ₹ 85, M.P. = ₹ 100

If the S.P. of jeans is ₹1, M.P. = ₹ $\frac{100}{85}$

If the S.P. of jeans is ₹1035, M.P = $\frac{\overset{20}{\cancel{100}}}{\underset{17}{\cancel{85}}} \times 1035$

$= \frac{20700}{17}$

$\approx$ ₹ 1217.65

4. Let C.P. = ₹100

Gain = 25%

$S.P = \left(\frac{100 + P.\%}{100}\right) \times C.P.$

$= \left(\frac{100+25}{\underset{1}{\cancel{100}}}\right) \times \overset{1}{\cancel{100}}$

= ₹125

discount = 20%

$M.P. = \frac{100 \times S.P}{100 - D.\%}$

$= \frac{100 \times 125}{100 - 20}$

$= \frac{\overset{5}{\cancel{100}} \times 125}{4 \cancel{80}}$

$= ₹ \frac{625}{4}$

Difference = M.P. − C.P.

$= \frac{625}{4} - 100$

$= \frac{625 - 400}{4}$

$= ₹\frac{225}{4}$

Percentage increase $= \frac{\frac{225}{4}}{\frac{100}{1}} \times \frac{100}{1}^{1}$

$= \frac{225}{4}\%$

$= 56.25\%$

5. Let M.P. $= ₹100$

$D_1 = 50\%$

$D_2 = 50\%$

$S.P. = \left(1 - \frac{D_1}{100}\right)\left(1 - \frac{D_2}{100}\right) \times M.P.$

$= \left(1 - \frac{\overset{1}{\cancel{50}}}{\underset{2}{\cancel{100}}}\right)\left(1 - \frac{\overset{1}{\cancel{50}}}{\underset{2}{\cancel{100}}}\right) \times 100$

$= \frac{1}{\underset{1}{\cancel{2}}} \times \frac{1}{\underset{1}{\cancel{2}}} \times \overset{\overset{25}{\cancel{50}}}{\cancel{100}}$

$= ₹25$

Discount $=$ M.P. $-$ S.P.

$= 100 - 25$

$= ₹75$

$\therefore$ single discount $= 75\%$

6. M.P. of shirt $= ₹1500$

$D_1 = 20\%$

$D_2 = 25\%$

S.P. of shirt $= \left(1 - \frac{D_1}{100}\right)\left(1 - \frac{D_2}{100}\right) \times M.P.$

$= \left(1 - \frac{\overset{1}{\cancel{20}}}{\underset{5}{\cancel{100}}}\right)\left(1 - \frac{\overset{1}{\cancel{25}}}{\underset{4}{\cancel{100}}}\right) \times 1500$

S.P. of shirt $= \left(1-\frac{1}{5}\right)\left(1-\frac{1}{4}\right) \times 1500$

$= \frac{4^{1}}{5_{1}} \times \frac{3}{4_{1}} \times \cancel{1500}^{300}$

$= ₹\,900$

∴ Amount paid by Kunal for shirt = ₹ 900

7. List price of fan = ₹ 4000

S.P. of fan = ₹ 2800

$D_1 = 20\%$

$D_2 = ?$

S.P. of fan after first discount $= \left(\frac{100-D_1}{100}\right) \times M.P.$

$= \left(\frac{100-20}{100}\right) \times 4000$

$= 80 \times 40$

$= ₹\,3200$

$D_2 = 3200 - 2800$

$= ₹\,400$

Second discount $= \frac{\cancel{400}^{50}}{\cancel{3200}^{4}_{2}} \times 100^{25}$

$= \frac{25}{2}\%$

$= 12.5\%$

OR

$\left(1-\frac{D_1}{100}\right)\left(1-\frac{D_2}{100}\right) \times M.P = S.P$

or $\left(1-\frac{\cancel{20}^{1}}{\cancel{100}_{5}}\right)\left(1-\frac{D_2}{100}\right) \times 4000 = 2800$

or $\left(1-\frac{1}{5}\right)\left(1-\frac{D_2}{100}\right)\times 4000 = 2800$

or $\frac{4}{5}\left(1-\frac{D_2}{100}\right)\times 4000 = 2800$

or $1-\frac{D_2}{100} = \frac{\cancel{2800}^{7}}{\cancel{4000}_{2}} \times \frac{\cancel{5}}{4}$

or $1-\frac{D_2}{100} = \frac{7}{8}$

or $1-\frac{7}{8} = \frac{D_2}{100}$

or $\frac{1}{\cancel{8}_{2}} \times \frac{\overset{25}{\cancel{100}}}{} = D_2$

or $D_2 = \frac{25}{2}$ -1.

or $D_2 = 12.5$ -1.