

VIII Test - II (COMPARING QUANTITIES)

- 1) Express the following as percentages :-
(a) $\frac{9}{20}$ (b) $1\frac{1}{4}$
- 2) Find the value of 27% of ₹50
- 3) What percent is 300g of 2kg?
- 4) What percent of ₹9 is ₹4?
- 5) The price of an article increases from ₹960 to ₹1080. Find the percentage increase in the price.
- 6) Roy reduced his weight by 15%. If now he weighs 59.5kg, what was his earlier weight?
- 7) A notebook is marked at ₹30. Find the price a student pays for a dozen notebooks if he gets 15% discount
- 8) Seema purchased a hair dryer for ₹5400 including 8% VAT. Find the price before VAT was added.
- 9) The cost of a pair of roller skates at a shop was ₹450. The sales tax charged was 5%. Find the bill amount.
- 10) Find the amount if ₹2,000 is invested for 2 years at 4% p.a. compounded annually.
- 11) Find the compounded interest on ₹31,250 at 12% p.a for $12\frac{1}{2}$ years.
- 12) Find the compound interest on ₹48,000 for one year at 8% per annum when compounded half-yearly.
- 13) Find the amount and compound interest on ₹1,00,000 for 9 months at 4% p.a when compounded quarterly.
- 14) By selling a chair for ₹391, Ali suffers a loss of 15%. Find its cost price.

VIII

Test - II (COMPARING QUANTITIES - Answers)

$$1) (a) \frac{9}{20} \times 100 = 45\%$$

$$(b) 1 \frac{1}{4} = \frac{5}{4} \times 100 = 125\%$$

$$2) 27\% \text{ of } ₹ 50 = \frac{27}{100} \times 50 = ₹ 13.5$$

$$3) \because 2 \text{ kg} = 2000 \text{ g}$$

$$\frac{300}{2000} \times 100 = 15\%$$

$$4) \frac{4}{9} \times 100 = \frac{400}{9} = 44.44\%$$

$$5) \text{Original value} = ₹ 960$$

$$\text{new value} = ₹ 1080$$

$$\% \text{ increase in the price} = \frac{\text{New value} - \text{original value}}{\text{original value}} \times 100\%$$

$$= \frac{1080 - 960}{960} \times 100$$

$$= \frac{1200}{96} = 12.5\%$$

$$6) \text{decrease } \% = 15\%$$

$$\text{new weight} = 59.5 \text{ kg}$$

Let the original weight be x

$$\text{decrease } \% = \frac{\text{Original weight} - \text{new weight}}{\text{original weight}} \times 100\%$$

$$15 = \frac{(x - 59.5) \times 100}{x}$$

$$\Rightarrow 15x = 100x - 5950$$

$$\Rightarrow 15x - 100x = -5950$$

$$\Rightarrow -85x = -5950$$

$$x = \frac{5950}{85} = 70$$

Hence his earlier weight was 70 kg.

$$7) \quad M.P. = ₹ 30$$

$$\text{discount \%} = 15\%$$

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

$$= \frac{100 - 15}{100} \times 30 = \frac{85}{100} \times 30$$

$$= ₹ \frac{51}{2}$$

$$\therefore \text{Price for a dozen notebook to be paid}$$

$$= \frac{51}{2} \times 12 = ₹ \underline{\underline{306}}$$

$$8) \quad \text{Bill amount} = ₹ 5400$$

$$\text{VAT \%} = 8\%$$

Let the price before VAT was added be ₹ x

Then, $x + 8\%$ of $x = 5400$

$$\Rightarrow x + \frac{8}{100}x = 5400$$

$$\Rightarrow \frac{108x}{100} = 5400$$

$$\therefore x = \frac{5400 \times 100}{108} = 5000 //$$

Hence the price before VAT was added = ₹ 5000

$$9) \quad \text{Cost of a pair of roller skates} = ₹ 450$$

$$\text{Sales tax} = 5\%$$

$$\therefore \text{Bill amount} = 450 + 5\% \text{ of } 450$$

$$= 450 + \frac{5}{100} \times 450$$

$$= 450 + 22.5$$

$$= ₹ \underline{\underline{472.50}}$$

$$10) \quad P = ₹ 2000$$

$$n = 2 \text{ years}$$

$$R = 4\%$$

$$\text{Amount} = P \left(1 + \frac{R}{100}\right)^n = 2000 \left(1 + \frac{4}{100}\right)^2$$

$$= 2000 \times \frac{104}{100} \times \frac{104}{100} = \underline{\underline{\text{₹ } 2163.20}}$$

11) $P = \text{₹ } 31250$
 $R = 12\%$

$$n = 2\frac{1}{2} \text{ years} = 2 + \frac{1}{2} \text{ years}$$

$$\text{Amount} = P \left(1 + \frac{R}{100}\right)^2 \left(1 + \frac{R}{200}\right)$$

$$= 31250 \left(1 + \frac{12}{100}\right)^2 \left(1 + \frac{12}{200}\right)$$

$$= 31250 \times \frac{112}{100} \times \frac{112}{100} \times \frac{106}{100}$$

$$= 28 \times 28 \times 53$$

$$= \text{₹ } 41,552$$

$$\therefore \text{C.I.} = A - P = 41552 - 31250$$

$$= \underline{\underline{\text{₹ } 10,302}}$$

12) $P = \text{₹ } 48000$
 $R = 8\%$

$$n = 1 \text{ year}$$

$$\text{Amount} = P \left(1 + \frac{R}{200}\right)^{2n}$$

$$= 48000 \left(1 + \frac{8}{200}\right)^2$$

$$= 48000 \times \frac{104}{100} \times \frac{104}{100} = 51916.8$$

$$= \text{₹ } 51,916.80$$

$$\therefore \text{C.I.} = A - P = 51,916.80 - 48,000$$

$$= \underline{\underline{\text{₹ } 3,916.80}}$$

$$13) \quad P = ₹ 1,00,000$$

$$n = 9 \text{ months} = \frac{9}{12} = \frac{3}{4} \text{ year}$$

$$R = 4\%$$

$$\text{Amount} = P \left(1 + \frac{R}{400}\right)^{4n}$$

$$= 100000 \left(1 + \frac{4}{400}\right)^{4 \times \frac{3}{4}}$$

$$= 100000 \left(\frac{101}{100}\right)^3$$

$$= 100000 \times \frac{101}{100} \times \frac{101}{100} \times \frac{101}{100}$$

$$= \frac{1030301}{10} = ₹ 1,03,030.10$$

$$\therefore \text{C.I} = A - P = 1,03,030.10 - 1,00,000$$

$$= ₹ 3,030.10$$

$$14) \quad \text{S.P} = ₹ 391$$

$$\text{loss\%} = 15\%$$

$$\text{C.P} = \frac{100}{100 - \text{loss\%}} \times \text{S.P}$$

$$= \frac{100}{100 - 15} \times 391$$

$$= \frac{100}{85} \times 391$$

$$= \frac{100}{85} \times 391$$

$$= ₹ 460$$