

VIII

H.W-15 (Comparing Quantities)

* discount = Marked Price - Sale Price

* discount = discount % of Marked Price

* Cost Price = buying price + overhead expenses

* Sales tax = tax % of Marked Price

* Amount = Principal + Interest

* Amount when interest is compounded annually

$$A = P \left(1 + \frac{R}{100}\right)^n$$

$P \rightarrow$ principal amount

$R \rightarrow$ rate of interest

$n \rightarrow$ time period

* Amount when interest is compounded half yearly

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

(Mark Questions)

- 1) A shirt with marked price Rs 800 was sold at Rs 680. The rate of discount allowed on the shirt is
(a) 10% (b) 15% (c) 20% (d) 25%
- 2) If $\frac{7}{3}$ % of a number is 42, then the number is
(a) 9800 (b) 8 (c) 1800 (d) 180
- 3) If Cost price of 10 shirts is equal to the selling price of 8 shirts, then which of the following is true for the transaction?
(a) Profit of 25% (b) Loss of 25% (c) Profit of 20% (d) loss of 20%
- 4) By selling 50 pens, a shopkeeper lost the amount equal to the selling price of 10 pens. His loss percent is _____
- 5) The discount per cent is calculated on the _____ price of an article.
- 6) Amna purchased a toy for Rs 660 including sales tax. If the rate of sales tax is 10%, then the selling price of the toy is _____
- 7) When the interest is compound half yearly, the number of conversion periods in a year is four (T/F)?
- 8) Arnav buys a book costing Rs 600. If the rate of sales tax is 7%, then the total amount payable by him is Rs 642 (T/F)?
- 9) After allowing a discount of 15% on the marked price of an article, it is sold for Rs 680. The marked price of the article is Rs 800. (T/F)?

- 10) Over head charges, if any, are sometimes included in the cost price (T/F)?
- 11) A number is increased by 20% and then it is decreased by 20%. Find the net increase or decrease per cent.
- 12) Vishakha offers a discount of 20% on all the items at her shop and still makes a profit of 12%. What is the cost price of an article marked at Rs 280?
- 13) If marked price of an article is Rs 1,200 and the discount is 12% then the selling price of the article is
 (a) Rs 1,056 (b) Rs 1,344 (c) Rs 1,212 (d) Rs 1,188
- 14) If 90% of x is 315 km, then the value of x is
 (a) 325 km (b) 350 km (c) 350 m (d) 325 m
- 15) To gain 25% after allowing a discount of 10%, the shopkeeper must mark the price of the article which costs him Rs 360 as
 (a) Rs 500 (b) Rs 450 (c) Rs 460 (d) Rs 486
- 16) If $a\%$ is the discount per cent on a marked price x , then discount is
 (a) $\frac{x \times 100}{a}$ (b) $\frac{a \times 100}{x}$ (c) $x \times \frac{a}{100}$ (d) $\frac{100}{x \cdot a}$
- 17) Shyama purchases a scooter costing Rs 36,450 and the rate of sales tax is 9%, then the total amount paid by her is
 (a) Rs 36,490.50 (b) Rs 39,730.50 (c) Rs 36,454.50 (d) Rs 33,169.50
- 18) The marked price of an article is Rs 80 and it is sold at Rs 76, then the discount rate is
 (a) 5% (b) 95% (c) 10% (d) approx. 11%
- 19) 40% of $(100 - 20\% \text{ of } 300) =$
 (a) 20 (b) 16 (c) 140 (d) 64
- 20) If 20% of x is 25, then $x =$ _____
 (a) 100 (b) 125 (c) 175 (d) 50

VIII Homework - 15 (Comparing Quantities - Answers)

1) M.P = Rs 800

Bill amount = Rs 680

$$\text{discount} = \text{M.P.} - \text{Bill amount} = 800 - 680 \\ = \text{Rs } 120$$

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

$$= \frac{120}{800} \times 100 = 3 \times 5 = 15\% \text{ (b)}$$

2) Let the number be x .

Then, $\frac{1}{3}\%$ of $x = 42$

$$\Rightarrow \frac{1}{3} \times \frac{1}{100} \times x = 42$$

$$\therefore x = \frac{42 \times 3 \times 100}{1} = 1800 \text{ (c)}$$

3) Let the C.P of 1 shirt be ₹x
 Then, C.P of 10 shirts = ₹10x
 Given, C.P of 10 shirts = S.P of 8 shirts,
 S.P of 8 shirts = 10x
 \therefore S.P of 1 shirt = $\frac{10x}{8} = \frac{5x}{4}$

$$\text{Profit} = \text{S.P} - \text{C.P} = \frac{5x}{4} - x = \frac{5x - 4x}{4} = \frac{x}{4}$$

$$\text{Profit \%} = \frac{\text{profit}}{\text{C.P}} \times 100\%$$

$$= \frac{x}{4} \times 100 = \frac{x}{4} \times \frac{1}{x} \times 100$$

$$= 25\% \text{ profit (a)}$$

4) Let the Selling price of 1 pen be ₹x
 Then, S.P of 50 pens = ₹50x.
 Given, loss = S.P of 10 pens = ₹10x
 loss = C.P - S.P

$$10x = \text{C.P} - 50x$$

$$\therefore \text{C.P} = 10x + 50x = 60x$$

$$\text{loss \%} = \frac{\text{loss}}{\text{C.P}} \times 100\% = \frac{10x}{60x} \times 100$$

$$= \frac{50}{3}\%$$

5) Marked price

6) Price of the toy, bill amount = ₹660

Let the Sale price be ₹x

$$\text{Then, } x + 10\% \text{ of } x = 660$$

$$x + \frac{10}{100}x = 660$$

$$\frac{110}{100}x = 660$$

$$x = \frac{660 \times 100}{110} = 600$$

Hence, the selling price of the toy is Rs 600

7) When the interest is compounded half yearly, the number of conversion periods in a year is two.
Hence false.

$$\begin{aligned} 8) \text{ Bill amount} &= 600 + 7\% \text{ of } 600 \\ &= 600 + \frac{7}{100} \times 600 \\ &= 600 + 42 = \text{₹}642 \end{aligned}$$

Hence True

$$\begin{aligned} 9) \text{ Let the M.P be } \text{₹}x \\ \text{Then, } x - 15\% \text{ of } x &= 680 \\ x - \frac{15}{100}x &= 680 \end{aligned}$$

$$\frac{85x}{100} = 680$$

$$\begin{aligned} \therefore x &= \frac{680 \times 100}{85} = 40 \times 20 \\ &= \text{₹}800 // \end{aligned}$$

Hence True

10) Over head charges are always included in the cost price. Hence false

11) Let the number be 100

$$\begin{aligned} \text{Increased value} &= 20\% \text{ of } 100 = \frac{20}{100} \times 100 = 20 + 100 \\ &= \underline{\underline{120}} \end{aligned}$$

$$\begin{aligned} \text{Decreased value} &= 120 - 20\% \text{ of } 120 \\ &= 120 - \frac{20}{100} \times 120 \\ &= 120 - 24 = \underline{\underline{96}} \end{aligned}$$

$$\begin{aligned} \therefore \% \text{ decrease} &= \frac{\text{Original value} - \text{new value}}{\text{original value}} \times 100\% \\ &= \frac{100 - 96}{100} \times 100 \\ &= \underline{\underline{4\%}} \end{aligned}$$

$$12) \text{ Marked price} = \text{Rs } 280$$
$$\text{Bill amount} = 280 - 20\% \text{ of } 280$$

$$= 280 - \frac{20}{100} \times 280 = 280 - 56 = \underline{\underline{\text{Rs } 224}}$$

$$\text{S.P} = \text{Rs } 224$$

$$\text{Profit \%} = 12\%$$

$$\therefore \text{C.P} = \frac{100 \times \text{S.P}}{100 + \text{Profit \%}}$$

$$= \frac{100 \times 224}{100 + 12} = \frac{100 \times 224}{112} = \underline{\underline{\text{Rs } 200}}$$

$$13) \text{ M.P} = \text{Rs } 1200$$

$$\text{discount \%} = 12\%$$

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

$$= \frac{100 - 12}{100} \times 1200 = 88 \times 12 = \underline{\underline{\text{Rs } 1056}} \text{ (a)}$$

$$\begin{aligned}
 15) \quad & \text{gain\%} = 25\% \\
 & \text{discount\%} = 10\% \\
 & \text{C.P} = \text{Rs } 360 \\
 & \text{S.P} = \frac{100 + \text{gain\%}}{100} \times \text{C.P} \\
 & = \frac{100 + 25}{100} \times 360 \\
 & = \frac{125}{100} \times 360 = \text{₹} 450
 \end{aligned}$$

$$\begin{aligned}
 & \text{Let the M.P be } \text{₹} x. \\
 & x - 10\% \text{ of } x = 450 \\
 & x - \frac{10}{100} \times x = 450
 \end{aligned}$$

$$\frac{90x}{100} = 450$$

$$x = \frac{450 \times 100}{90} = \text{₹} 500 \text{ (a)}$$

$$\begin{aligned}
 16) \quad & \text{discount} = \text{discount\% of M.P} \\
 & = a\% \text{ of } x \\
 & = \frac{a}{100} \times x = x \times \frac{a}{100} \text{ (c)}
 \end{aligned}$$

$$\begin{aligned}
 17) \quad & \text{M.P} = \text{₹} 36,450 \\
 & \text{tax\%} = 9\%
 \end{aligned}$$

$$\begin{aligned}
 \text{Bill amount} &= \text{M.P} + \text{tax\% of M.P.} \\
 &= 36450 + 9\% \text{ of } 36450 \\
 &= 36450 + \frac{9}{100} \times 36450
 \end{aligned}$$

$$= 36450 + 3280.5$$

$$= \text{₹} 39730.50 \text{ (b)}$$

$$\begin{aligned}
 18) \quad & \text{discount} = \text{M.P} - \text{Sale Price} \\
 & = 80 - 76 = 4
 \end{aligned}$$

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

$$= \frac{4}{80} \times 100 = 5\% \text{ (a)}$$

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$$19) \frac{\cancel{40}^2}{100} \times \left(100 - \frac{\cancel{20}}{100} \times 300 \right)$$

$$= \frac{2}{5} (100 - 60) = \frac{2}{5} \times \cancel{40}^8$$

$$= 16 (b)$$

$$20) \frac{20}{100} \times x = 25$$

$$x = \frac{25 \times \cancel{100}^5}{\cancel{20}} = 125 (b)$$