

COMPARING QUANTITIES



Concepts Covered

- Comparing quantities using percentage, Use of percentages, Prices related to an item or buying/selling, Charge given on borrowed money or simple interest.

Percentage

Per cent means 'for every hundred'. A fraction, in which the denominator is 100, is a percentage. The denominator, i.e., 100 is denoted by a special symbol %, read as per cent.

Example:

$$\frac{10}{100} = 10\%$$

$$\frac{25}{100} = 25\%$$

$$\frac{x}{100} = x\%$$

Since any ratio is a fraction, each ratio can also be expressed as a percentage.

For example, a ratio of $\frac{1}{2}$ can be converted to a percentage figure as $\frac{1}{2} = \frac{1(50)}{2(50)} = \frac{50}{100} = 50\%$.

Converting Fractional Numbers to Percentages

Fractional numbers can have different denominators. To compare fractional numbers, we need a common denominator and we have seen that it is more convenient to compare if the denominator is 100, that is, fractions are converted to percentages

Example:

Write $\frac{1}{3}$ as per cent.

Solution: We have, $\frac{1}{3} = \frac{1}{3} \times 100\%$
 $= \frac{100}{3}\% = 33\frac{1}{3}\%$

Converting Decimals to Percentages

We have seen how fractions can be converted to percentages. Let us now find how decimals can be converted to percentages.

Example:

Convert 0.75 into percentage:

Solution: $0.75 = 0.75 \times 100\%$
 $= \frac{75}{100} \times 100\% = 75\%$

Expressing Percentage as a Fraction or Decimal:

Any percentage can be expressed as a decimal or a fraction by dividing the percentage figure by 100.

As $x\% = x$ out of 100 $= \frac{x}{100}$.

So, $75\% = 75$ out of 100 $= \frac{75}{100} = \frac{3}{4}$ or 0.75.

Example:

Express $\frac{7}{20}$ as a percentage.

Solution: $\frac{7}{20} = \frac{7}{20} \times 100\% = 35\%$

Example:

Express 0.625 as a percentage.

Solution: $0.625 = 0.625 \times 100\% = 62.5\%$

Example:

Out of 50 students in a class, 15 like to play cricket. What is the percentage of students who like to play cricket?

Solution: Total students = 50

Students who like to play cricket = 15

So, % age of students who like to play cricket:

$$\left(\frac{15}{50} \times 100\right)\% = 30\%$$

Example:

What percentage of the adjoining figure is shaded and what percentage is unshaded? Find it.

Solution: First, we will find the fraction of the figure that is shaded and unshaded. From this fraction, we will find the percentage of the shaded and unshaded regions.

So, shaded region = $\left(\frac{1}{4} + \frac{1}{4} + \frac{1}{4}\right) = \frac{3}{4}$

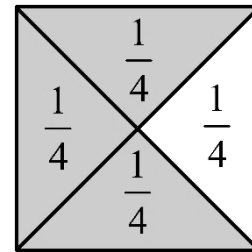
Now, the percentage of the shaded region

$$= \left(\frac{3}{4} \times 100\right)\% = 75\%$$

Unshaded region = $\frac{1}{4}$

Now, the percentage of the unshaded region

$$= \left(\frac{1}{4} \times 100\right)\% = 25\%$$



Example:

In a village, 40% of the population comprises of children below 14 years of age. If the ratio of the number of men to the number of women is 2:1, then find the number of women in that village, given that the total population of the village is 5000.

Solution: Total population = 5000

Population of children = $\frac{40}{100} \times 5000 = 2000$

Rest of the population = 3000

Let the number of men and women be 2k and k, respectively.

$$\therefore 3k = 3000 \Rightarrow k = 1000$$

$$\therefore \text{Number of women} = 1000$$

Ratios to Percentages

Sometimes, parts are given to us in the form of ratios and we need to convert those to percentages.

Example:

Reena's mother said, to make idlis, you must take two parts rice and one part urad dal. What percentage of such a mixture would be rice and what percentage would be urad dal?

Solution: In terms of ratio, we would write this as Rice : Urad dal = 2:1.

Now, 2 + 1 = 3 is the total of all parts. This means $\frac{2}{3}$ part is rice and $\frac{1}{3}$ part is urad dal.

Then, the percentage of rice would be $\frac{2}{3} \times 100\% = \frac{200}{3} = 66\frac{2}{3}\%$.

The percentage of urad dal would be $\frac{1}{3} \times 100\% = \frac{100}{3} = 33\frac{1}{3}\%$.

Increase or Decrease as Percentage

There are times when we need to know the increase or decrease in a certain quantity as a percentage.

Example:

A school team won 6 games this year against 4 games won last year. What is the percent increase in the number of wins?

Solution: The increase in the number of wins (or amount of change) = 6 - 4 = 2.

$$\begin{aligned} \text{Percentage increase} &= \frac{\text{amount of change}}{\text{original amount or base}} \times 100 \\ &= \frac{\text{increase in the number of wins}}{\text{original number of wins}} \times 100 = \frac{2}{4} \times 100 = 50\% \end{aligned}$$



- (1) Write (i) $\frac{1}{4}$ (ii) $\frac{22}{44}$ (iii) $\frac{4}{25}$ as percent.
- (2) Convert the following percentages into fractions:
 (i) 45% (ii) 65% (iii) 42.5%
- (3) William travelled a distance of 10 km. He covered 70% of the distance by bus and the remaining on foot. What distance did he travel by bus ? How much distance did he cover on foot ?

Answer Key

- (1) (i) 25% (ii) 50% (iii) 16% (2) (i) $\frac{9}{20}$ (ii) $\frac{13}{20}$ (iii) $\frac{17}{4}$ (3) By Bus = 7km, By Foot 3km

Profit and Loss

When a person buys an article for a certain price and then sells it for a different price, he makes a profit or incurs a loss.

Cost Price (C.P.): The price at which an article is purchased is called its cost price.

Selling Price (S.P.): The price at which an article is sold is called its selling price.

Profit and Loss: If the selling price of an article is greater than its cost price, then we say that there is a profit (or) gain, and if it is less, then we say that there is a loss. If S.P. > C.P. i.e., if $p > 0$, then there is a profit. If $p < 0$, then there is a loss. If $S = C$, then there is no profit and no loss. Profit or loss is generally expressed as a percentage of the cost price.

In case of profit	In case of Loss
Profit = S.P. - C.P.	Loss = C.P. - S.P.
S.P. = Profit + C.P.	C.P. = Loss + S.P.
C.P. = S.P. - Profit	S.P. = C.P. - Loss

Example:

A milkman buys 20 litres of milk from a dairy for ₹370. He sells it at the rate of ₹21.50 per litre. Find his profit or loss.

Solution: C.P. of 20 litre milk = ₹370
 S.P. of 1 litre milk = ₹21.50
 Therefore, S.P. of 20 litres of milk
 = ₹21.50 × 20
 = 430
 Clearly, S.P. > C.P., so profit
 = ₹430 - ₹370
 = ₹60

Example:

A girl purchased 12 packets for ₹156. Each packet contains 10 pencils. She sold all the pencils at a price of ₹2 per pencil. Find the profit or loss.

Solution: 12 packets have $12 \times 10 = 120$ pencils.
 C.P. for 120 pencils = ₹156
 Selling price for 1 pencil = ₹2

 Therefore, the S.P. of 120 pencil
 = $120 \times 2 = ₹240$
 Since S.P. > C.P., therefore, there will be a profit.
 Profit = ₹240 - ₹156
 = ₹84.

Profit or Loss Percentage

In order to calculate the profit or loss in percent, we use the following formulae:

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

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

Profit or loss percent is always calculated on the C.P.

$$\begin{aligned} \text{(i) S.P.} &= \frac{\text{C.P.} \times (100 + \text{Profit \%})}{100} && \text{In case of profit \%} \\ \text{S.P.} &= \frac{\text{C.P.} \times (100 - \text{Loss \%})}{100} && \text{In case of loss \%} \end{aligned}$$

$$\begin{aligned} \text{(ii) C.P.} &= \frac{\text{S.P.} \times 100}{(100 + \text{Profit\%})} && \text{In case of profit \%} \\ \text{C.P.} &= \frac{\text{S.P.} \times 100}{(100 - \text{Loss\%})} && \text{In case of loss \%} \end{aligned}$$

Example:

Krishna sold a motor bike for ₹15000, losing 25%. Find the cost price of a motor bike.

Solution: $S = (100 - \text{loss\%})\%$ of C

$$\Rightarrow 15,000 = \left[\frac{(100 - 25)}{100} \right] (C)$$

$$\Rightarrow C = 15,000 \times \frac{100}{75}$$

$$\Rightarrow C = ₹20,000$$

Example:

A trader allows 20% discount on the marked price of his articles. If the marked price is ₹150 and the gain per cent is 20%, then find the cost price of each article.

Solution: Marked price = ₹150

Percentage of discount = 20%

$$S = 80\% \text{ of } 150 = \left(\frac{80}{100} \right) \times 150 = ₹120$$

$S = ₹120$ and gain % = 20%

$S = 120\%$ of C.

$$120 = \frac{120}{100} \times C \Rightarrow C = 120 \times \frac{100}{120} \Rightarrow C = ₹100$$

\therefore Cost price = ₹100

Example:

Nandan sells a quintal of wheat for ₹308; thereby, gaining a profit of 12%. By selling a quintal of rice for the same amount, he losses 12%. Find the C.P. of both rice and wheat. In addition, find his total gain or loss.

Solution: Given S.P. of wheat = ₹308, Gain = 12%

$$\text{We know, C.P.} = \frac{\text{S.P.} \times 100}{(100 + \text{gain \%})}$$

$$\text{Therefore, C.P.} = \frac{308 \times 100}{100 + 12} = \frac{308 \times 100}{112}$$

$$= ₹275$$

Now, S.P. of rice = ₹308

Loss = 12%

$$\text{We know, C.P.} = \frac{100 \times \text{S.P.}}{(100 - \text{Loss\%})}$$

$$\text{Therefore, C.P. of rice} = \frac{100 \times 308}{(100 - 12)}$$

$$= \frac{100 \times 308}{88}$$

$$= ₹350$$

Total C.P. of wheat and rice = ₹(275 + 350) = ₹625

Total S.P. = ₹(308 × 2) = ₹616

We can see that S.P. < C.P.

Loss = ₹625 - ₹616 = ₹9



- (1) A trader purchased 10 quintals of wheat from a farmer for Rs. 8,750. He sold it at Rs. 11.50 per kg. Find the amount of profit/loss made by the trader.
- (2) A girl purchased 12 packets of pencils for Rs. 156. Each packet contains 10 pencils. She sold all the pencils at a price of Rs. 2 per pencil. Find the profit or loss she made.
- (3) Karim bought 150 dozens of pencils at Rs. 20 a dozen. He sold them at Rs. 2.50 per pencil. Find the profit or loss percent.
- (4) Neelu bought 2400 bananas at Rs. 15 a dozen. She sold 1350 of them at Rs. 4 for 2 and remaining at Rs. 8 for 5. Find her gain or loss percent.

Answer Key

- (1) Rs. 2750 (2) Rs. 84 (3) 50% (4) 46%

Simple Interest

Interest is the money paid by a borrower to the lender for using the money for a specified period of time. For example, if person A borrows ₹100 from person B for a period of one year on the condition that he would repay ₹110 at the end of a year, the additional money of ₹10 is the interest. A is the borrower and B is the lender and ₹100 is the principal.

Principal or Sum: The money borrowed from an agency or an individual for a certain period of time is called the principal or the sum.

Amount: The principal together with the interest is called the amount, i.e., Amount (A) = Principal (P) + Interest (I).

Rate of Interest: The interest on ₹100 per annum is called the rate of interest per annum.

Simple Interest: If the principal remains the same for the entire loan period, then the interest paid is called the simple interest.

Formula for Computation of simple Interest:

Let P be the principal in rupees, R be the rate of interest, and T be the number of years. Then,

$$\text{Simple Interest (S.I.)} = \frac{\text{PTR}}{100}$$

$$\text{Also, Amount (A) = Principal (P) + Simple Interest (S.I.)} = P + \frac{\text{PTR}}{100} = P \left(1 + \frac{\text{RT}}{100} \right)$$

$$\text{Amount} = P \left(1 + \frac{\text{RT}}{100} \right)$$

Example:

Find the simple interest on ₹ 2560 for 3 years at 15% per annum.

Solution:

Principal (P) = ₹2560

Time period (T) = 3 years

Rate(R) = 15% p.a.

$$\text{Simple interest (I)} = \frac{\text{PTR}}{100}$$

$$= 2560 \times 3 \times \frac{15}{100} = 128 \times 9 = ₹1152$$

Example:

At what rate of per cent, ₹1500 amounts to ₹2100 in 4 years?

Solution:

Time period (T) = 4 years

Amount (A) = ₹2100

Principal (P) = ₹1500

Interest = A - P

$$= ₹(2100 - 1500) = ₹600$$

$$\begin{aligned} \text{We have, } I &= \frac{PTR}{100} \\ 600 &= 1500 \times 4 \times \frac{R}{100} \\ \Rightarrow 600 &= 60 \times R \Rightarrow R = \frac{600}{60} \Rightarrow R = 10 \\ \therefore \text{Rate of interest} &= 10\% \text{ p.a.} \end{aligned}$$

Example:

A sum of money becomes $\frac{7}{4}$ of itself in 6 years at a certain rate of interest. Find the rate of interest.

Solution: Let the Principal be ₹ P, then amount = ₹ $\frac{7}{4}$ P, Time period = 6 years.

We have to find the rate (R)

Then, Amount = Principal + S.I.

$$\frac{7}{4}P = P + \text{S.I.}$$

$$\text{S.I.} = \frac{3P}{4}$$

We know that,

$$\text{S.I.} = \frac{P \times R \times T}{100}$$

$$\frac{3P}{4} = \frac{P \times R \times 6}{100}$$

$$3P \times 100 = 4 \times P \times R \times 6$$

$$300P = 24P \times R$$

Therefore, Rate (R) $\frac{300P}{24P} \%$

$$R = \frac{300P}{24P} \% = \frac{300}{24} \%$$

$$R = \frac{300 \div 12}{24 \div 12} \% = \frac{25}{2} \% = 12\frac{1}{2} \%$$

Hence, the required rate of percent

$$= 12\frac{1}{2} \% \text{ per annum}$$

Solved Examples

(1) Given the following values, find the unknown values:

(i) C.P. = ₹1200, S.P. = ₹ 1350, Profit/Loss = ?

(ii) C.P. = ₹ 980, S.P. = ₹ 940, Profit/Loss = ?

(iii) C.P. = ₹ 720, S.P. = ?, Profit = ₹ 55.50

(iv) C.P. = ?, S.P. = ₹ 1254, Loss = ₹ 32

Solution : (i) CP = ₹ 1200, SP = ₹ 1350

CP < SP; So, profit.

Profit = ₹ (1350 – 1200) = ₹ 150

(ii) CP = ₹ 980, SP = ₹ 940

CP > SP; So, loss.

Loss = ₹ (980 – 940) = ₹ 40

(iii) CP = ₹ 720, SP = ?, profit = ₹ 55.50

Profit = SP – CP ⇒ ₹ 55.50 = SP – ₹ 720

SP = ₹ (55.50 + 720) = ₹ 775.50

(iv) CP = ?, SP = ₹ 1254, loss = ₹ 32

Loss = CP – SP

₹ . 32 = CP – ₹ 1254

CP = ₹ (1254 + 32) = ₹ 1286

(2) A grain merchant sold 600 quintals of rice at a profit of 7%. If one quintal of rice costed him ₹ 250 and his total overhead charges for transportation were ₹ 1000, find his total profit and the selling price of 600 quintals of rice.

Solution : Cost of 1 quintal of rice = ₹ 250

Cost of 600 quintals of rice = 600 × 250 = ₹ 150000

Overhead expenses = ₹ 1000

Total CP = ₹ (150000 + 1000) = ₹ 151000

$$\text{Profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100$$

$$7 = \frac{P}{151000} \times 100$$

P = 1510 × 7 = ₹ 10570

Profit = ₹ 10570

SP = CP + profit = ₹ (151000 + 10570) = ₹ 161570

(3) Express each of the following per cents as fractions in the simplest forms:

(i) 45%

(ii) 0.25%

(iii) 150%

(iv) $6\frac{1}{4}\%$.

Solution : (i) 45% = $\frac{45}{100} = \frac{9}{20}$.

(ii) 0.25% = $\frac{0.25}{100} = \frac{25}{10000} = \frac{1}{400}$.

(iii) 150% = $\frac{150}{100} = \frac{3}{2}$

(iv) $6\frac{1}{4}\%$ = $\frac{6.25}{100} = \frac{625}{10000} = \frac{1}{16}$

(4) Express each of the following fractions as percentages:

(i) $\left(\frac{3}{4}\right)$

(ii) $\left(\frac{53}{100}\right)$

(iii) $1\left(\frac{3}{5}\right)$

(iv) $\left(\frac{7}{20}\right)$

Solution : (i) $\frac{3}{4}\%$ = $\left(\frac{3}{4} \times 100\right)\%$ = 75%

(ii) $\frac{53}{100}\%$ = $\left(\frac{53}{100} \times 100\right)\%$ = 53%

(iii) $1\frac{3}{5}\%$ = $\frac{8}{5}$ = (1.6 × 100)% = 160%

(iv) $\frac{7}{20}\%$ = $\left(\frac{7}{20} \times 100\right)\%$ = 35%

(5) Naresh bought 4 dozen pencils at ₹ 10.80 a dozen and sold them for 80 paise each. Find his gain or loss percent (up to two decimal points).

Solution : Cost of 1 dozen pencils = ₹ . 10.80

Cost of 4 dozen pencils = 4 × 10.80 = ₹ . 43.2

Selling price of each pencil = 80 paise

Total number of pencils = 12 × 4 = 48

SP of 48 pencils = 48 × 80 paise = 3840 paise = ₹ . 38.40

Here, SP < CP.

Loss = CP – SP = ₹ . (43.2 – 38.4) = ₹ . 4.8

Loss % = (Loss/CP) × 100

= (4.8/43.2) × 100

= 480/43.2

= 11.11%

(6) A businessman makes a 10% profit by selling a toy costing him ₹ 120. What is the selling price (in ₹.)?

Solution : CP = ₹ . 120, Profit % = 10
 We know that SP = $\{(100 + \text{profit \%})/100\} \times \text{CP}$
 $= \{(100+ 10)/100\} \times 120$
 $= \{(110/100)\} \times 120 = 1.1 \times 120$
 $= ₹ . 132$

(7) Avinash bought an electric iron for ₹ 900 and sold it at a gain of 10%. He sold another electric iron at a 5% loss which was bought for ₹ 1200. On the transaction, he has:

Solution: Avinash bought an electric iron = ₹ 900, he sold it, at 10% profit.
 So, the selling price of the electric iron = $\frac{10}{100} \times 900 + 900$
 $= 90 + 900 = ₹ 990$
 He also sold another electric iron at 5% loss.
 The cost price of another electric iron = ₹ 1200
 So, the selling price of the electric iron = $1200 - \frac{5}{100} \times 1200$
 $= 1200 - 60 = ₹ 1140$
 Total amount paid by Avinash for purchasing electric irons = ₹ 900 + ₹ 1200 = ₹ 2100, Total received amount = ₹ 990 + ₹ 1140
 $= ₹ 2130$. So, his profit = ₹ 2130 - ₹ 2100 = ₹ 30 in transaction.

(8) The marked price of an article is ₹ 500. The shopkeeper gives a discount of 5% and still makes a profit of 25%. Find the cost price of the article.

Solution: Given, the marked price of an article = ₹ 500
 Discount = 5%
 But it makes a profit of 25%.
 Let the cost price of the article be ₹ x.
 Cost price after 5% discount = $500 - \frac{5}{100} \times 500 = 500 - 25 = ₹ 475$
 According to the Question:
 $(100 + 25)\%$ of x = 475
 $\Rightarrow \frac{125}{100} \times x = 475$
 $\Rightarrow x = \frac{475 \times 100}{125} = 38 \times 10 = ₹ 380$
 Hence, the cost price of an article is ₹ 380.

(3) Anupama bought household items whose marked price and discount % are given below. Find the total amount of the bill she has to pay.

	Item	Quantity	Rate (in ₹)	Discount %
(i)	Atta	1 packet	200	16%
(ii)	Detergent	1 packet	371	22.10%
(iii)	Namkeen	1 packet	153	18.30%

Solution: On the basis of the given data in the above table,
 Rate of one packet of atta = ₹ 200
 Discount % = 16%
 So, Price = $200 - \frac{16}{100} \times 200 = 200 - 32 = ₹ 168$
 Rate of one packet of detergent = ₹ 371, Discount % = 22.10%
 So, price = $371 - 371 \times \frac{22.10}{100} = 371 - 81.991 = ₹ 289.009$
 Rate of one packet of namkeen = 153, Discount % = 18.30%
 So, price = $153 - 153 \times \frac{18.30}{100} = 153 - 27.999 = ₹ 125.001$

(10) On selling a pen for ₹ .48, a shopkeeper loses 20%. In order to gain 20%, what should be the selling price?

Solution: Let the CP of a pen be x.
 SP of a pen = ₹ .48
 Loss = 20%
 Therefore, CP is more than SP.
 Now, Loss = CP - SP and Loss = Loss percent \times CP
 Thus, CP - SP = Loss percent \times CP
 $\Rightarrow x - 48 = \frac{20}{100} \times x$

$$\begin{aligned} \Rightarrow 100x - 4800 &= 20x \\ \Rightarrow 100x - 20x &= 4800 \\ \Rightarrow 80x &= 4800 \\ \Rightarrow x &= 4800/80 \\ \Rightarrow x &= 60 \end{aligned}$$

Therefore, CP of the pen = ₹ 60.
 Now, in order to gain 20%, let the new SP be y.

$$\begin{aligned} \text{Gain} &= \text{Gain percent} \times \text{CP} \\ &= \frac{20}{100} \times 60 \\ &= ₹ . 12 \\ \text{SP} &= \text{CP} + \text{Gain} \\ &= ₹ . 60 + ₹ 12 \\ &= ₹ 72 \end{aligned}$$

(11) A number is increased by 40 % and then decreased by 40 %. Find the net increase or decrease per cent.

Solution: Let the number be 100.

$$\text{Increase in the number} = 40 \% = 40 \% \text{ of } 100 = \left(\frac{40}{100} \times 100\right) = 40$$

$$\text{Therefore, increased number} = 100 + 40 = 140$$

This number is decreased by 40 %

$$\text{Therefore, decrease in number} = 40 \% \text{ of } 140$$

$$= \left(\frac{40}{100} \times 140\right) = 5600/100 = 56$$

$$\text{Therefore, new number} = 140 - 56 = 84$$

$$\text{Thus, net decreases} = 100 - 84 = 16$$

$$\text{Hence, net percentage decrease} = \left(\frac{16}{100} \times 100\right) \%$$

$$= \left(\frac{1600}{100}\right) \% = 16 \%$$

(12) In an election between two candidates, 10% of the voters did not cast their votes. 10% of the votes polled were found invalid. The successful candidate got 54% of the valid votes and won by a majority of 1620 votes. Find the number of voter enrolled on the voters list.

Solution: Let the number of voters be x

$$\text{No. of voters who did not cast vote} = 0.1x$$

$$\text{No. of votes found invalid} = 0.9x \times 0.1 = 0.09x$$

No of votes the Successful candidate got

$$= \frac{54}{100} \times (x - 0.1x - 0.09x) = \frac{54}{100} \times 0.81x$$

$$\text{No of votes the other candidate got} = \frac{46}{100} \times 0.81x$$

$$\text{Hence} \left(\frac{54}{100} - \frac{46}{100}\right) \times 0.81x = 1620 \text{ or } x = 25,000 \text{ votes}$$

(13) How much more per cent seats were won by X as compared to Y in the assembly election in the state based on the data given below?

Party	Won (out of 294)
X	158
Y	105
Z	18
W	13

Solution: On the basis of above given table

$$\text{Total number of seats won by party X} = 158$$

$$\text{The total number of seats won by party Y} = 105$$

$$\therefore \text{Total number of seats in election} = 294$$

$$\therefore \text{Percentage of seats won by party X} = \frac{158}{294} \times 100 = 53.74\%$$

$$\therefore \text{Percentage of seats won by party Y} = \frac{105}{294} \times 100 = 35.71\%$$

$$\text{So, difference of percentage} = (53.74 - 35.71)\% = 18.03\%$$

Hence, party X won 18.03% compared to party Y.

Exercise

FILL IN THE BLANKS

- (1) If 10% loss is made on selling price, then the rate of loss on the cost price will be _____
- (2) In _____ years will a sum of ₹ 800 at 10% per annum compound interest, compounded semiannually, becomes ₹ 926.10
- (3) If a number increases from 20 to 28, then the increasing percentage is _____
- (4) If 25% of a number is 12, then the number is _____

TRUE OR FALSE

- (1) When a number is reduced by 4, it becomes 80% of itself. Then the number is 40.
- (2) 20% more than 30 is 36.
- (3) 0.018 is equivalent to 8%.
- (4) If Feroz obtains 336 marks out of 600 marks, then the percentage of marks obtained by him is 33.6.

OBJECTIVE TYPE QUESTION

- (1) How do you write 91.2% as a decimal?

(A) 9.12	(B) 0.9012
(C) 0.912	(D) 91.2
- (2) A pudding is made of 200gm sugar, 800gm eggs, 600gm flour, and 200gm dry fruits. What percent of sugar is present in the whole pudding?

(A) $\frac{1}{9}$ %	(B) $\frac{2}{3}$ %
(C) $\frac{1}{4}$ %	(D) $\frac{1}{2}$ %
- (3) Monika answered $\frac{3}{4}$ of the questions on her quiz correctly. What percent of the questions did she answer correctly?

(A) 25%	(B) 34%
(C) 50%	(D) 75%
- (4) Which of the following is the largest value?

(A) 55% of 1	(B) $\frac{9}{20}$ of 1
(C) 0.055	(D) 18% of 1
- (5) Which of the following is equal to 0.0273?

(A) 2.73%	(B) 27.3%
(C) 0.273%	(D) 20.73%
- (6) CP = Rs 950, gain = 6%, then the selling price is

(A) 1000	(B) 1003
(C) 1005	(D) 1007
- (7) On selling a bat for Rs 100, a man gains Rs 20. His gain % is

(A) 20%	(B) 25%
(C) 18%	(D) 22%
- (8) On selling a pen for Rs 48, a shopkeeper loses 20%. In order to gain 20%, what would be the selling price?

(A) Rs 52	(B) Rs 56
(C) Rs 68	(D) Rs 72
- (9) Amir scored 69 out of 80 in his mathematics exam. His score in percentage is _____.

(A) 69%	(B) 80%
(C) 86.25%	(D) 13.75%

Answer Key

FILL IN THE BLANKS

- (1) 10%
- (2) 40%
- (3) $1\frac{1}{2}$
- (4) 48

TRUE OR FALSE

- (1) False
- (2) True
- (3) False
- (4) False

OBJECTIVE TYPE QUESTION

- | | | | |
|-----|-----|-----|-----|
| (1) | (C) | (6) | (D) |
| (2) | (A) | (7) | (B) |
| (3) | (D) | (8) | (D) |
| (4) | (A) | (9) | (C) |
| (5) | (A) | | |