Dear Parents / Students

Due to the unprecedented situation, Knowledgeplus Training center is mobilized and will keep accompanying and supporting our students through this difficult time. Our Staff will be continuously, sending notes and exercises on a weekly basis through what's app and email. Students are requested to copy the notes and do the exercises on their copybooks. The answers to the questions below will be made available on our website on knowledgeplus.mu/support.php. Please note that these are extra work and notes that we are providing our students and all classes will be replaced during the winter vacation. We thank you for your trust and are convinced that, together, we will overcome these troubled times.

Knowledgeplus Training Center

Mathematics

Garde 8

Week 6

Notes and Exercise

Note:(All the Notes, Examples and Exercise are on the photos and Note:(Please copy all the Notes, Examples and Exercises on your copy book).

Mathematics Grade 8 Week 6
Percentage Profit and Loss

The cost price or buying price is the price at which an article is bought.

The selling price is the price at which an article is sold

When the selling price is greater than the cost price, we say that a profit is made.

Profit = Selling price - Cost price.

If the selling price is lower than the cost price, we say that a loss is made.

Loss = Cost price - Selling price.

Example 1

Terry bought a phone at Rs 8000 and sold it at Rs 10 000.

(a) Find the profit that Terry made.

(b) Find the profit made as a percentage of the cost price.

Solution

Buying price = Rs 8000

Selling price = Rs 10 000

Since the selling price is greater than the buying price, Terry has made a profit.

Terry's profit = selling price − Buying price

= Rs 10000 − Rs 8000

= Rs 2000

Method 1

$$\text{Percentage Profit} = \frac{\text{Profit}}{\text{Cost Price}} \times 100\%$$

$$= \frac{2000}{8000} \times 100\% = 25\%$$

Method 2

Rs 8000 → 100 %

Rs 1 → $\frac{100}{8000}$ %

Rs 2000 → $\frac{100}{8000} \times 2000$

= 25 %

We can express the profit or loss in terms of percentage as follows:

$$\text{Percentage Profit} = \frac{\text{Profit}}{\text{Cost price}} \times 100\%$$

$$\text{Percentage Loss} = \frac{\text{Loss}}{\text{Cost Price}} \times 100\%$$

Attempt:Ex1(a-e), Ex2(a-e), Ex3(a-b).

1. In each of the following, find
- **(i)** the profit,
- **(ii)** the percentage profit.

(a) Cost price Rs4, Selling price Rs5
(b) Cost price Rs20, Selling price Rs22
(c) Cost price Rs40, Selling price Rs45
(d) Cost price Rs25, Selling price Rs30
(e) Cost price Rs60, Selling price Rs66

2. In each of the following, find
- **(i)** the loss,
- **(ii)** the percentage loss.

(a) Cost price Rs20, Selling price Rs18
(b) Cost price Rs6, Selling price Rs4
(c) Cost price Rs50, Selling price Rs48
(d) Cost price Rs12, Selling price Rs9
(e) Cost price Rs72, Selling price Rs63

3. A bookseller bought a book for Rs100 and sold it for Rs140.
- **(a)** What was his profit?
- **(b)** Express the profit as a percentage of the cost price.

Calculation of selling price

Example 1 Bina bought a saree per Rs 12000. She sold it at a profit of 15%. Calculate the selling price of the saree.

Solution

Cost Price = Rs 12000

Profit = 15%

$$\text{Profit} = \frac{15}{100} \times \text{Rs } 12000$$

$$= \text{Rs } 1800$$

∴ selling price = Buying Price + Profit

= Rs 12000 + Rs 1800

= Rs 13800

Example 2

The same question by made a loss of 15%.

Buying price = Rs 12000

Loss = 15%

$$\text{Loss} = \frac{15}{100} \times 12000$$

$$= \text{Rs } 1800$$

∴ Selling price = Buying Price − Loss

= Rs 12000 − Rs 1800

= 10200

Attempt:Ex1(a-d), Ex2.

1. Calculate the selling price for each of the following:
   (a) Buying price = Rs 350, profit = Rs 125.
   (b) Buying price = Rs 1 300, loss = Rs 680.
   (c) Buying price = Rs 7 200, percentage loss = 20%.
   (d) Buying price = Rs 5 650, percentage profit = 15%.

2. Andrea bought a television set for Rs 22 800 and sold it at a loss of Rs 4 600. Find the selling price.

Attempt:Ex1(a-b), Ex2(a-b).

1. Tejasvi sold a dress at Rs 575, making a profit of Rs 125.
   (a) What is the cost price of the dress?
   (b) Find her percentage profit.

2. Akash bought 600 apples for Rs 2 240. On reaching home, he found out that 40 apples were rotten. He sold the remaining apples at Rs 5 each. Find:
   (a) his profit or loss.
   (b) his percentage profit or percentage loss.

Attempt:Ex6,7,8.

6. Wasim bought a car for Rs 200 000 and sold it for Rs 180 000. Find his percentage loss.

7. Nadia bought a dozen of pencils at Rs 150. She sold each pencil at Rs 18. Find her percentage profit.

8. Johnny buys 10 video games for Rs 4 500. If he sells them at a profit of 20%, find the selling price of one video game.

Calculation of Cost Price

Example1

Milan sold a bag at Rs 650, making profit of 25%. What was the buying price of the bag?

Solution

Buying Price = 100%

Profit = 25%

selling price = (100% + 25%) = 125%

125% → Rs 650

1% → Rs $\frac{650}{125}$

100% → Rs $\frac{650}{125} \times 100\% = Rs\ 520$

∴ Buying price of bag = Rs 520

Example2

The same question like Example1 by now making a loss of 15%.

Solution

Buying price = 100%

Loss = 15%

selling price = 100% − 15% = 85%

85% → Rs 650

1% → Rs $\frac{650}{85}$

100% → Rs $\frac{650}{85} \times 100\% = Rs\ 764.71$

∴ Buying price = Rs 764.71

Attempt:Ex1,2,3.

1. Pooja sold her jewellery box at Rs 1 360, thus making a profit of Rs 175. Find the buying price of the jewellery box.

2. In 2016, Dilshaad bought a car. In 2018, she sold it for Rs 450 000, thereby making a loss of 10 %. Find the buying price of the car.

3. Mr James bought 20 packets of stickers and sold them to pupils at school. He makes a profit of 10 % when he sells each packet at Rs 44. Find the amount of money he spent to buy the 20 packets of stickers.

Discount

Discount = Marked Price - Sale Price

$$\text{Percentage Discount} = \frac{\text{Discount}}{\text{Marked price}} \times 100\%$$

Calculation of discount and percentage discount

Example

The marked price of a refrigerator is Rs 24000. In a sale, the price is reduced to Rs 18000.

Find (a) the discount

(b) the percentage discount

Solution

(a) Marked price of refrigerator = Rs 24000

Sale price of refrigerator = Rs 18000

Discount = Marked price - Sale price

= Rs 24000 - Rs 18000

= Rs 6000

(b) $\text{Percentage discount} = \frac{\text{Discount}}{\text{Marked price}} \times 100\%$

$= \frac{\text{Rs } 6000}{\text{Rs } 24000} \times 100\%$

$= 25\%$

Calculation of sale price

Example

During the Christmas sales, Pashmina Ltd offered a 10% discount on all its articles. If the actual price of an item was Rs 750, calculate the sale price of the item.

Solution

marked price = Rs 750

method 1

% discount = 10%

Actual price = Rs 750

$$\text{Discount} = \text{Rs } \frac{10}{100} \times 750$$

$$= \text{Rs } 75$$

Sale price of article = (Rs 750 − Rs 75)

= Rs 675

Method 2

% discount = 10%

Actual Price = 100%

sale price = (100% − 10%)

= 90%

$$\therefore \text{Sale price} = \frac{90}{100} \times \text{Rs } 750$$

= Rs 675

Calculation of marked price

Example

During the sale for Diwali, all prices in a shop were reduced by 20%. Chitra bought a churidar for Rs 1830. Find the marked price of churidar.

Solution

% discount = 20%

~~Sale price = (100% − 20%) of marked price =~~

Sale price = 100% − 20%

= 80%

80% → Rs 1830

1% → Rs $\frac{1830}{80}$

100% → Rs $\frac{1830}{80} \times 100\% = Rs\ 2287.50$

Attempt:Ex1,2,3,4,5.

1. If the price of a book is Rs1 200, how much will you pay for the book if you get a discount of 10%?

2. After a discount of 20%, the price of an article is Rs 490. Calculate the marked price of the article.

3. Husna wants to buy a game priced at Rs 350 but she only has Rs 275. If she gets a discount of 15%, how much more money will she need to be able to purchase the game?

4. Hitesha has Rs 1 000. The price of a bracelet is Rs 600. Given Hitesha gets 25% discount, will she be able to buy two bracelets?

5. Peter gets 10% discount on all the articles shown below. How much will each of these pairs of slippers cost? Show all your workings.

Rs 360

Rs 2 600

Rs 490