Money

We have already learnt to recognise coins and notes of different denominations and have solved the word problems related to it, involving addition and subtraction.

Let us learn about unitary method and profit-loss in this class.

Finding the price of one item is called finding the unit price and the method is called the unitary method. You go to market to buy some articles. First you enquire the price of an article and when you know the price of an article it will help you to find the price of the number of articles you would like to buy.

The Unitary Method

Romi wants to buy a packet of pen. Packet A of 10 pen is available for ₹ 58 and packet B of 10 pen is available for ₹ 110. The quality of both pens different and the varieties is the different both packet should Romi wants to knows price first for according her budget.

Packet A

Packet B

Here, 58 ₹ and 110 ₹ we have to find which of the two packets will cost less.

To do so, we need to find the price of one pencil of each kind.

Price of one pencil of packet A	Price of one pencil of packet B
Cost of 10 pencils = ₹ 58	Cost of 10 pencils = ₹ 110
Cost of 1 pencil = 58 ÷ 10	Cost of 1 pencil = 110 ÷ 10
= 5.8	= 11.00
Cost of 1 pencil = ₹ 5.80	Cost of 1 pencil = ₹ 11.00

The cost of 1 pencil of packet A is RS 5.80 and the cost of 1 pencil of packet is 11.

Now, Romi choose packet which to get a better accordingly her budget.

Example I : Ashok bought 2 toffees for ₹ 22. How much money will he pay to buy 8 toffees of the same kind?
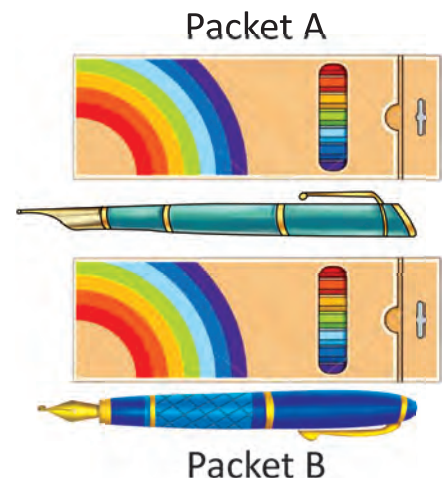
Solution : First, we have to find the price of 1 toffee.

Cost of 2 toffees = ₹ 22

Cost of 1 toffee = ₹ 22 ÷ 2

= ₹ 11

Cost of 8 toffees = ₹ 11 × 8

= ₹ 88

Ashok will have to pay ₹ 88 for 8 toffees.

Example II : The cost of 1 quintal (1 quintal = 100 kg) wheat is ₹600. Find the cost of 30 kg of wheat.

Solution : 1 quintal = 100 kg

The cost of 100 kg of wheat	=	₹ 600
The cost of 1 kg of wheat	=	₹ 600 ÷ 100 = ₹ 6
The cost of 30 kg of wheat	=	30 × ₹ 6 = ₹ 180
Therefore, the cost of 30 kg of wheat	=	₹ 180.

Facts to Know

❍ The price of 1 unit of a kind is found by division.

❍ The price of a number of objects of the same kind is found by multiplication.

Exercise 13.1

1. **Which is a better deal compare in each of the following?**

   a.

   6 lollypop for 60 Rs   or   7 chocolates for 56 Rs

   b.
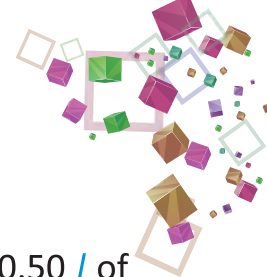

   3 pens for ₹ 40.50   or   5 pens for ₹ 63.75

2. **Solve the following.**
   a. Reema bought 19 copies for ₹ 532. What is the cost of 1 copy ?
   b. Sandhya bought 3.5 *l* of cooking oil for ₹ 275. What will be the cost of 10.50 *l* of cooking oil?
   c. 15 bags of sugar cost ₹ 450. If each bag contains 3 kg of sugar, find the cost of 1 kg of sugar.
   d. 9 pieces of ribbon cost ₹ 108.90. What is the price of 11 such ribbons?

Profit and Loss

Mr. Chetan is a wholesale dealer of pen. He buys pen from the factory and sells them in his shop. He bought a variety of pen for ₹ 120 per box and sold the same for ₹ 145 per box. Naturally, he has earned some money in the whole transaction.

He has earned ₹ 145 – ₹ 120 = ₹ 25 per box.

₹ 120 is called the cost price (C.P.) of the pen.

₹ 145 is called the selling price (S.P.) of the pen.

₹ 25 is the profit earned by Mr. Chetan.

❖ The price at which an item is bought is called the cost price.

❖ The price at which an item is sold is called the selling price.

❖ When selling price is more than the cost price, there is a profit.

Profit = S.P. – C.P.

What will happen if Mr. Anand had to sell the same pencils for an amount less than the cost price?

Suppose Mr. Anand had to sell the pencils for ₹ 110.

Here, selling price is less than the cost price. Mr. Anand would have to bear a loss.

❖ When cost price is more than the selling price, there is a loss.

Loss = C.P. – S.P.

Example III : A shopkeeper bought a dictionary for ₹ 195.50 and sold it for ₹ 225.75. What is his profit or loss?

Solution :

Cost price (C.P.)   = ₹ 195.50

Selling price (S.P.) = ₹ 225.75

Here, selling price is more than the cost price. So, there is a profit.

Profit = S.P. – C.P.

= ₹ 225.75 – ₹ 195.50

= ₹ 30.25

The shopkeeper made a profit of ₹ 30.25.

Example IV :   A shopkeeper bought a kids chair for ₹ 1575 and sold for ₹ 1500. Find the loss to the shopkeeper in the transaction.

Solution : Cost Price (C.P.) of the kids chair = ₹ 1575

Selling Price (S.P.) of the kids chair   = ₹ 1500

Here, selling price is less than the cost price. So, there is a loss.

Loss = cost price – selling price

= ₹ 1575 – ₹ 1500 = ₹ 75

Therefore, the loss to the shopkeeper is ₹ 75.

Calculating Cost Price and Selling Price

To find profit or loss, we need to know the C.P. and S.P. It means formulae for profit and loss have three terms each : C.P., S.P. and profit or loss.

We can find the third quantity if two quantities are known.

Calculating Cost Price (C.P.)

To find C.P. when profit (P) is given, we use the formula :

$$C.P. = S.P. – P$$

To find C.P. when loss (L) is given, we use the formula :

$$C.P. = S.P. + L$$

Facts to Know

○ Profit is also known as gain.

Example V : Ankur made a profit of ₹ 57.50 on selling a pair of gloves for ₹ 225.00. What was the cost price of the pair of gloves?

Solution : Selling price = ₹ 225.00

Profit = ₹ 57.50

Cost price = Selling price – Profit

= ₹ 225.00 – ₹ 57.50 = ₹ 167.50

The cost price of the pair of gloves was ₹ 167.50.

Example VI : Deepak sold a pair of shoes for ₹ 930.00. He suffered a loss of ₹ 83.00 in the deal. What was the cost price of the shoes?

Solution : Selling price = ₹ 930.00

Loss = ₹ 83.00

Cost price = Selling price + Loss

= ₹ 930.00 + ₹ 83.00 = ₹ 1013.00

The cost price of the pair of shoes was ₹ 1013.00.

Calculating selling price

To find S.P. when profit is given, we use the formula :

$$S.P. = C.P. + P$$

To find S.P. when loss is given, we use the formula :

$$S.P. = C.P. - L$$

Example VII : An electrician bought some bulbs worth ₹ 2400 and sold them at a profit of ₹ 120. What was the selling price of the bulbs?

Solution : Cost price = ₹ 2400

Profit = ₹ 120

Selling price = Cost price + profit

= 2400 + 120

= ₹ 2520

The selling price of the bulb was ₹ 2520.

Example VIII : Madan bought a bag of sugar for ₹ 1120 and sold it for ₹ 28 less. What was the selling price of the bag of sugar?

Solution : Cost price = ₹ 1120

Loss = ₹ 28

Selling price = Cost price – Loss

= 1120 – 28 = ₹ 1092

Madan sold the bag of sugar for ₹ 1092.

1. **Find profit or loss in each case.**

	Cost price (C.P.)	Selling price (S.P.)	Profit/Loss	Amount
a.	₹ 215.00	₹ 265.00		
b.	₹ 102.00	₹ 95.00		
c.	₹ 2528	₹ 2972		
d.	₹ 9365	₹ 5867		
e.	₹ 11550	₹ 7254		
f.	₹ 14,500	₹ 15,400		
g.	₹ 18,650	₹ 18, 560		

2. **Find the cost price for each of the following.**

	Selling price (S.P.)	Profit	Loss	Cost price (C.P.)
a.	₹ 8179	₹ 725.00	....	
b.	₹ 8545	....	₹ 118.00	
c.	₹ 5039	₹ 129.00	....	
d.	₹ 9899	....	₹ 876.00	

3. **Find the selling price for each of the following.**

	Cost price (C.P.)	Profit	Loss	Selling price (S.P.)
a.	₹ 7429	₹ 729.00	....	
b.	₹ 6457	....	₹ 509.00	
c.	₹ 8247	₹ 248.00	....	
d.	₹ 9087	....	₹ 901.00	

4. **Solve the following word problems.**

a. Pinku bought a mobile phone for ₹ 3625 and sold it for ₹ 3782. Find his profit or loss.

b. Yash bought a pen for ₹ 17.50 and sold it for ₹ 22.00. Find his loss or profit.

c. A man bought a fan for ₹ 725.00. He sold it at a loss of ₹ 50.00. What was the selling price of the fan?

d. Uchit Narayan bought an old bicycle for ₹ 650.00 and sold it at a profit of ₹ 75. What was the selling price?

Points to Remember

❖ In the Unitary method, we divide to find the price of one item or unit price.

❖ If the unit price is known, we can find the cost of many items of the same kind by multiplication.

❖ If the selling price is more than the cost price, there will be a profit.

❖ If the cost price is more than the selling price, there will be a loss.

❖ Profit = S.P. – C.P. and Loss = C.P. – S.P.

EXERCISE

1. Multiple Choice Questions (MCQs)

Tick (✓) the correct option:

a. The price of a number of objects of the same kind is found by ....

   (i)   division   (ii) subtraction

   (iii) multiplication   (iv) none of these

b. Sara bought 8 hair band for 66. What is the cost of 1 hair band?

   (i)   ₹8.25   (ii) ₹8.50

   (iii) ₹9.00   (iv) ₹9.25

c. If the cost of a dozen egg is ₹54, the cost of 1 egg will be ....

   (i)   ₹4.50   (ii) ₹4.25

   (iii) ₹4.75   (iv) ₹5.00

d. If the selling price is more than the cost price, there is a ....

   (i)   profit   (ii) loss

   (iii) C.P.   (iv) none of these

e. Selling Price = Cost Price + ...

   (i)   Loss   (ii) Profit

   (iii) 1   (iv) None of these

2. **Find the gain or loss in each of the following cases.**

   a.   C.P. = ₹ 175.00 S.P. = ₹ 193.00

   b.   C.P. = ₹ 355.00 S.P. = ₹345.00

   c.   C.P. = ₹ 112.25 S.P. = ₹ 121.00

   d.   C.P. = ₹ 319.75 S.P. = ₹ 397.25

3. Bhullar butcher bought a goat for ₹7975. He sold it for ₹ 8919. What is his profit or loss?

4. Mangeram buys a basket of musk-melon for ₹ 1125. He sells the basket for ₹ 1025. Find his gain or loss.

5. A bookseller sold 45 books for ₹ 890.00 and earned a profit of ₹ 90.00. Find the cost price of 45 books.

6. A man sold a refrigerator for ₹ 8400 and lost ₹ 450. Find the cost price of the refrigerator.

HOTS

A florist bought 20 bunches of 10 rose flowers, each bunch for ₹1200. He sold each flower for ₹ 10.00. Find his profit or loss.

Lab Activity

Objective	: To relate money to everyday life.
Materials Required	: One or two newspapers of the previous week, chart paper, a pair of scissors, fevistick and a coloured pencil

Activities :

❖ Ask the students to read the newspaper and underline news items related to money.

❖ The news items are cutout with the pictures (if there are).

❖ The cutouts are pasted on the chart paper to form a collage.

❖ The teacher discusses with the students about the prices related to different items.

❖ The charts are displayed in the class.

MENTAL MATHS

Rosy and Reena together have ₹ 500. Reena has ₹ 30 more than Rosy. What is the share of each?