We shall learn in this chapter

- Concept of Unitary Method
- Finding the Value of Many Knowing the Value of One
- Finding the Value of One Knowing the Value of Many

CHAPTER 4

Unitary Method

There are 2 simple rules of this method :

1. To find the value of one when we have the value of many, we divide.
2. To find the value of many when we have the value of one, we multiply.

FINDING THE VALUE OF MANY WHEN THE VALUE OF ONE IS GIVEN

Solved Examples

Example 1 : Suppose you have to buy 4 chocolates and you want to know that how much they will cost. You ask for the price of one chocolate and from that you can calculate the cost of 4 chocolates. The cost of one chocolate is ₹5.

Solution : Clearly, the cost of more chocolates, will be more, therefore, we multiply.

So, if you know the price of one thing, you can find the total price of a given number of things.

$\therefore$ The cost of 4 chocolates = The cost of 1 chocolate × 4

= ₹5 × 4

= ₹20

Thus, the cost of 4 chocolates is ₹20.

Knowing the price of a thing, we can find the price of given number of things of the same price.

Example 2 : The cost of 1 bag is ₹20. Find the cost of 4 such bags.

Solution : Cost of 1 bag = ₹20

We must multiply the cost of 1 bag by the number of bags.

$\therefore$ Cost of 4 bags = ₹20 × 4 = ₹80

Thus, the cost of 4 bags is ₹80.

FINDING THE VALUE OF ONE WHEN THE VALUE OF MANY IS GIVEN

Solved Examples

Example 1 : If the shopkeeper tells you that a dozen pencils cost ₹24, how much will you have to pay for a single pencil ?

Knowing the value of many we can find the value of one by dividing the value of the given number of objects by the number of objects.

Solution : We know, 1 dozen = 12

Cost of 12 pencils = ₹24

∴ Cost of 1 pencil = ₹24 ÷ 12

= ₹2

Thus, the cost of 1 pencil is ₹2.

Example 2: The cost of 12 pens is ₹60. Find the cost of 16 pens.

Solution : Here, we must combine both methods of division and multiplication :

∵ Cost of 12 pens = ₹60

∴ Cost of 1 pen = ₹60 ÷ 12 = ₹5

∴ Cost of 16 pens = ₹5 × 16 = ₹80

Thus, the cost of 16 pens is ₹80.

EXERCISE

A1 A3

Use the unitary method to solve the following:

The cost of 4 notebooks is ₹60. What is the cost of 1 notebook? ₹60 ÷ 4 = ₹15

If one pencil box costs ₹22, how much do 15 such pencil boxes cost? ₹22 × 15 = ₹330

Four cakes of soap weigh 692 grams. What is the weight of 1 cake of soap? 692g ÷ 4 = 173g

A car goes 250 km in 5 hours. How far does it go in 1 hour? 250Km ÷ 5 hour = 50Km/hr

A bottle contains 200 ml of ghee. Rekha bought 5 such bottles. How much ghee did she buy? 200ml × 5 = 1000 ml

If the price of a packet of potato chips is ₹5, what is the price of a dozen packets of potato chips? ₹5 × 12 = ₹60 (1 dozen = 12)

The cost of 6 litres of petrol is ₹210. What is the cost of 1 litre petrol? ₹210 ÷ 6 litres = ₹35/l

A factory can make 620 bicycles in 4 days. How many bicycles can the factory make in 12 days? 620 ÷ 4 = 155 bicycles/day 155 × 12 = 1860 bicycles in 12 days.

The train fare from Patna to Delhi for 2 passengers is ₹560. What will be the fare for 5 passengers? ₹560 ÷ 2 = ₹280/passenger ₹280 × 5 = ₹1400 for 5 passengers.

The cost of a packet containing a dozen birthday cards is ₹144. Find the cost of 6 such birthday cards. ₹144 ÷ 12 = ₹12 ₹12 × 6 = ₹72

MORE TO DO

A3

Tick (✓) the correct answer:

1. To find the value of many items, knowing the value of one we need to–

(a) add (b) subtract (c) multiply (d) divide

2. To find the value of one item, knowing the value of many items of the same kind we need to–

(a) add (b) subtract (c) multiply (d) divide

3. If the cost of an envelope is ₹ 2, then the cost of 12 such envelopes is–

(a) ₹ 20 (b) ₹ 24 (c) ₹ 40 (d) ₹ 36

4. The cost of a dozen bananas is ₹ 24. The cost of 6 bananas will be–

(a) ₹ 22 (b) ₹ 18 (c) ₹ 12 (d) none of these

5. If the cost of 18 CDs is ₹ 270, then the cost of 20 CDs is–

(a) ₹ 300 (b) ₹ 500 (c) ₹ 210 (d) none of these

II. Write (T) for True and (F) for False in the boxes :

(a) The cost of 3 apples is ₹ 9, if the cost of each apple is ₹ 6.

(b) Cost of 7 shirts is ₹ 4585 . Cost of 2 shirts is ₹ 1310.

(c) If a bus can carry 82 passengers, then 4 buses can carry 328 passengers.

(d) A train covers 1008 km in 6 hours. It will go 160 km in 1 hr if it moves uniformly.

(e) The share of each child is 4 chocolates if 168 chocolates are divided among 42 children.

Puzzle Time

1. If we know the cost of 50 medicines, can we find the cost of 14 medicines ?

2. 30 erasers are to be sold. The cost of 98 erasers is ₹ 196. Find the cost of 30 erasers.

3. A train travels 950 km in 5 hours. How much time will it take to travel 380 km.