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Tender Heart High School ; Sec-33B, Chandigarh

Class - VI

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Subject - Mathematics

Teacher - Ms. Sushma

Ch-9 Unitary Method

For finding out the value of a given number of units, we first find the value of 1 unit.

This method is known as Unitary method.

Direct Proportion or Direct Variation.

Two quantities are said to be directly proportional, if on the increase of one, the other increases to the same extent and on the decrease of one, the other decreases to the same extent.

Exercise 9A

- Q1. The cost of 11 pens is ₹ 253. Find (i) the cost of 1 pen
(ii) the cost of 24 pens.

Soln:- The cost of 11 pens = ₹ 253

i) The cost of 1 pen = $253 \div 11 = ₹ 23$

ii) The cost of 24 pens = $23 \times 24 = ₹ 552$

So, the cost of 24 pens is ₹ 552.

- Q2. 14 tins contain 210 litres of oil. How much oil is contained in (i) 1 tin, (ii) 18 tins?

Soln:- Oil in 14 tins = 210 l.

" " 1 tin = $210 \div 14$

= 15 l.

(ii) Oil in 18 tins = 15×18
 $= 270 \text{ L}$

Q3. On 16 litres of diesel, a car runs 192 km. How many kilometres will it run on (i) 1 litre, (ii) 25 litres?

Soln:- Distance travelled in 16 l = 192 km
 (i) " " " 1 l = $192 \div 16$
 $= 12 \text{ km}$

(ii) Distance travelled in 25 l = 12×25
 $= 300 \text{ km.}$

Q4. If 8 kg rice costs ₹620, what will be the cost of 18 kg of rice?

Soln:- Cost of 8 kg of rice = ₹620
 Cost of 1 kg of rice = $620 \div 8 = \frac{620}{8}$
 Cost of 18 kg of rice = $\frac{620}{8} \times 18$
 $= \frac{620}{8_4} \times 18_9$
 $= \frac{155}{4_1} \times 9 = 155 \times 9$
 $= ₹1395$

So, the cost of 18 kg of rice is ₹1395.

Q5. If the cost of 13 m of cloth is ₹1664, what will be the cost of 15 m of the same cloth?

Soln:- Cost of 13 m of cloth = ₹1664
 Cost of 1 m of cloth = $1664 \div 13$
 Cost of 15 m of cloth = $\frac{1664}{13_1} \times 15 = 128 \times 15 = ₹1920$

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So, ₹1920 is the cost of 15m cloth.

Q6. If 15 tins of the same size contain 235 kg of oil, how much oil will be there in 12 such tins?

Soln:- Oil in 15 tins = 235 kg
Oil in 1 tin = $235 \div 15$
Oil in 12 tins = $\frac{235}{15} \times 12 = \frac{235 \times 4}{5} = 47 \times 4 = 188 \text{ kg.}$

So, there is 188 kg oil in 12 tins.

Q7. If 6m of a uniform iron rod weighs 21 kg, what will be the weight of 20m of the same rod?

Soln:- weight of 6m of uniform iron rod = 21 kg
" " 1m " " " " = $21 \div 6$
" " 20m " " " " = $\frac{21}{6} \times 20$
 $= \frac{21 \times 20}{6}$
 $= \frac{21 \times 10}{3} = \frac{210}{3} = 70 \text{ kg.}$

So, the weight of 20m of iron rod is 70 kg.

Q8. If the cost of 25 bananas is ₹95, how many bananas can be bought for ₹152?

Soln:- In ₹ 95, no. of bananas bought = 25

$$\text{In ₹ 1 " " " " } = \frac{25}{95}$$

$$\text{In ₹ 152, " " " " } = \frac{25}{95} \times 152$$

$$= \frac{5}{19} \times 152$$

$$= 5 \times 8 = 40$$

So, ₹ 152, 40 bananas can be bought.

Qy 9 A bus consumes 12.5 litres of diesel in covering a distance of 65 km. How much diesel will it consume in covering 416 km?

Soln:- To cover 65 km diesel required = 12.5 L

$$\text{" " 1 km " " } = \frac{12.5}{65}$$

$$\text{" " 416 km " " } = \frac{12.5}{65} \times 416$$

$$= \frac{125}{65} \times 416$$

$$= \frac{5}{13} \times 208$$

$$= 5 \times 16 = 80 \text{ L.}$$

Qy 10. 18 bags of rice having equal weights weigh 297 kg. How much will 22 such bags weigh?

Soln:-

$$\begin{aligned} \text{Weight of 18 bags} &= 297 \text{ kg} \\ \text{Weight of 1 bag} &= \frac{297}{18} \end{aligned}$$

$$\text{Weight of 22 bags} = \frac{297}{18} \times 22 = \frac{33 \times 297 \times 11}{9}$$

$$= 33 \times 11 = 363 \text{ kg.}$$