RS Aggarwal Solutions for Class 7 Mathematics chapter 9
Unitary Method

EXERCISE 9A PAGE: 133

1. If 15 oranges cost ₹110, what do 39 oranges cost?
Solution:-
From the question,
Cost of 15 orange = ₹110
Cost of 1 orange = ₹ (110/15)
∴Cost of 39 orange = ₹ (110/15) × 39
= ₹ 286

2. If 8 kg sugar costs ₹ 260, how much sugar can be bought for ₹877.50?
Solution:-
From the question,
Amount of sugar bought for ₹260 = 8kg
Amount of sugar bought for ₹1 = (8/260) kg
∴Amount of sugar bought for ₹877.50 = (8/260) × (877.50)
= 27kg

3. The cost of 37m of silk is ₹6290. What length of this silk can be purchased for ₹4420?
Solution:-
From the question,
The length of silk purchased for ₹6290 = 37m
The length of silk purchased for ₹1 = (37/6290)
∴The length of silk purchased for ₹4420 = (37/6290) × (4420)
= 26m

4. A worker is paid ₹ 1110 for 6 days. If his total wages during a month are ₹4625, for how many days did he work?
Solution:-
From the question,
Worker is paid ₹1110 for = 6 days
Worker is paid ₹1 for = (6/1110) days
Worker is paid ₹4625 for = (6/1110) × (4625)
= 25 days
∴Worker work for 25 days and he paid ₹4625.

5. A car can cover a distance of 357km on 42 liters of petrol. How far can it travel on 12 liters of petrol?
Solution:-
From the question,
The distance cover by car on 42 liters of petrol = 357km
The distance cover by car on 1 liter of petrol = (357/42) km
∴The distance cover by car on 12 liters of petrol = (357/42) × (12)
= 102 km

6. Travelling 900 km by rail costs ₹ 2520. What would be the fare for a journey of 360 km when a person travels by the same class?

Solution:-

From the question,

The total cost of travelling 900 km by rail = ₹ 2520

The cost of travelling 1 km by rail = ₹ (2520/900)

∴The cost of travelling 360 km by rail = (2520/900) × (360)

= ₹1008

7. A train covers a distance of 51 km in 45 minutes. How long will it take to cover 221 km?

Solution:-

From the question,

Time taken by the train to covers a distance of 51 km = 45 minutes

Time taken by the train to cover a distance of 1 km = (45/51) minutes

∴Time taken by the train to cover 221 km = (45/51) × (221)

= 195 minutes

∴Time taken by the train to cover 221 km is 3hour 15 minutes

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EXERCISE 9B PAGE: 134

1. If 48 men can dig a trench in 14 days, how long will 28 men take to dig a similar trench?
Solution:-
From the question,
48 men can dig a trench in 14 days
1 man can dig a trench in = (14 × 48) days ... [less men, more days]
∴ 28 men can dig a similar trench in = (14 × 48)/ 28
= 24 days ... [More men, less days]
Hence, the required number of days for 28 men to dig a trench = 24.

2. 16 men can reap a field in 30 days. How many men must be engaged to reap the same field in 24 days?
Solution:-
From the question,
16 men can reap a field in 30 days
1 man can reap a field in = (16 × 30) days ... [less men, more days]
∴Number of men required to reap a field in 24 days = (16 × 30) / 24
= 20 men ... [More men, less days]
Hence, 20 men required to reap a field in 24 days.

3. 45 cows can graze a field in 13 days. How many cows will graze the same field in 9 days?
Solution:-
45 cows can graze a field in 13 days
1 cow can graze a field in = (45 × 13) days ... [less cows, more days]
∴Number of cows required to graze a field in 9 days = (45 × 13)/ 9
= 65 cows ... [More cows, less days]
Hence, 65 cows required to graze a field in 9 days.

4. 16 horses can consume a certain quantity of corn in 25 days. In how many days would the same quantity be consumed by 40 horses?
Solution:-
From the question,
16 horses can consume a certain quantity of corn in 25 days
1 horse can consume a certain quantity of corn = (16 × 25)
∴Number of days taken by 40 horses to consume same quantity of corn = (16 × 25) / 40
= 10 days

5. A girl can finish a book in 25 days if she reads 18 pages of it every day. How many days will she take to finish it, if she reads 15 pages every day?
Solution:-
From the question,
Number of days taken to finish the book if she reads 18 pages every day = 25

Number of days taken to finish the book if she read 1 page every day = (18 × 25)
∴Number of days taken to finish the book if she reads 15 pages every day = (18 × 25)/ 15
= 30 days

6. Reeta types 40 words per minute and takes 24 minute to type a certain document. Her friend Geeta has a typing speed of 48 words per minute. In how much time, will she be able to type the same document?

Solution:-
From the question,
Reeta types 40 words per minute in = 24 minutes
Reeta type a word per minute = (24 × 40) minutes
∴Time taken to type 48 words per minute = (24 × 40) / 48
= 20 minutes
Hence, Geeta will take 20 minutes to type the same document, if her typing speed is 48 words per minute.

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EXERCISE 9C PAGE: 135

Mark against the correct answer in each of the following:

1. If 4.5 m of a uniform rod weighs 17.1 kg, what is the weight of 12 m of such a rod?

(a)51.2 kg (b)53 kg (c)45.6 kg (d)56 kg

Solution:-

(c)45.6 kg

Because,

4.5 m of a uniform rod weighs = 17.1 kg

1 m of rod weighs = (17.1/ 4.5)

∴ 12 m of such rod weighs = (17.1/ 4.5) × (12)

= 45.6 kg

2. In a map, 0.8 cm represents 8.8 km. How much distance will be represented by 80.5 cm?

(a)805 km (b)855.5 km (c)644 km (d)none of these

Solution:-

(d) None of these

Because,

From the question,

In a map 0.8 cm represents = 8.8 km

In a map 1 cm represents = (8.8/0.8) km

∴80.5 cm represents = (8.8/0.8) × 80.5

= 885.5 km

3. In a race, Raghu covers 5 km in 20 minutes, how much distance will he cover in 50 minutes?

(a)10.5 km (b)12 km (c)12.5 km (d)13.5

Solution:-

(c)12.5 km

Because,

Distance covered by Raghu in 20 minutes = 5 km

Distance covered by Raghu in 1 minutes = (5/20) km

∴ Distance covered by Raghu in 50 minutes = (5/20) × 50

= 12.5 km

4. A garrision of 500 men had provisions for 24 days. However, a reinforcement of 300 men arrived. The food will now last for

(a)18 days (b)17(1/2) days (c)16 days (d)15 days

Solution:-

(d)15 days

Because,

A garrision of 500 men had enough food for = 24 days

1 men had enough food for = (24 × 500)

∴ 800 men had enough food for = (24 × 500) / 800

= 15 days

5. If (4/5) of a cistern is filled in 1 minute, how much more time will required to fill the rest of it?
(a)20 seconds (b)15 seconds (c)12 seconds (d)10 seconds
Solutions:-
(b)15 seconds
Because,
(4/5) of a cistern is filled in = 1 minute
1 cistern is filled in = (1/(4/5)) = (5/4)
∴ (1/5) 0f a cistern is filled in = (5/4) × (1/5)
= (1/4) minutes
= 15 seconds

6. If 21 cows eat as much as 15 buffaloes, how many cows will eat as much as 35 buffaloes?
(a)49 (b)56 (c)45 (d) none of these
Solution:-
(a)49
Because,
The total number of cows eat as much as 15 buffaloes = 21
The total number of cows eat as much as 1 buffaloes = (21/15)
∴the total number of cows eat as much as 35 buffaloes = (21/15) × (35)
= 49 cows

7. A tree, 6 m tall, casts a 4-m-long shadow. At the same time a flag pole casts a 50-m-long shadow. How long is the flag pole?
(a)50 m (b)75 m (c)33(1/3) m (d)none of these
Solution:-
(b)75 m
Because,
A tree casts 4 m long shadow and its height = 6m
A tree casts 1 m long shadow and its height = (6/4) m
∴A flag pole casts a 50 m long shadow and its height = (6/4) × (50)
= 75 m tall

8. 8 men can finish a piece of work in 40 days. If 2 more men join them, the work will be completed in
(a)30 days (b)32 days (c)36 days (d)25 days
Solution:-
(b)32 days
Because,
8 men can finish a piece of work in = 40 days
1 men can finish a piece of work in = (8 × 40)
If 2 more men join them, i.e. 10 men can finish a work in = (8 × 40) / 10
= 32 days