

EXERCISE 13(A)

1. The price of 25 identical articles is Rs 1,750. Find the price of:

(i) one article

(ii) 13 articles

Solution:

(i) one article

Given

The price of 25 identical articles = 1,750

Hence, the price of one article can be calculated as follows:

Price of one article = $1750 / 25$

= Rs 70

∴ The price of one article is Rs 70

(ii) 13 articles

Given

Price of 25 identical articles = 1,750

Hence, the price of thirteen articles can be calculated as follows:

Price of one article = $1750 / 25$

= Rs 70

Price of thirteen articles = 13×70

= Rs 910

∴ The price of thirteen articles is Rs 910

2. A motorbike travels 330 km in 5 litres of petrol. How much distance will it cover in:

(i) one litre of petrol?

(ii) 2.5 litres of petrol?

Solution:

(i) one litre of petrol

Given

A motorbike travels 330 km in 5 litres of petrol

Hence, distance covered in one litre of petrol can be calculated as follows:

Distance covered by bike in one litre of petrol = $330 / 5$

= 66 km

∴ The bike covers 66 km of distance in one litre of petrol

(ii) 2.5 litres of petrol

Given

A motorbike travels 330 km in 5 litres of petrol

Hence, distance covered in 2.5 litres of petrol can be calculated as follows:

Distance covered by bike in 2.5 litres of petrol = 2.5×66

= 165 km

∴ The bike covers 165 km of distance in 2.5 litres of petrol

3. If the cost of a dozen soaps is Rs 460.80, what will the cost of:

(i) each soap?

(ii) 15 soaps?

(iii) 3 dozen soaps?

Solution:

(i) each soap

Given

Cost of one dozen soaps = Rs 460.80

We know that,

12 soaps = one dozen

Hence the price of one soap can be calculated as follows:

Price of one soap = $460.80 / 12$

= Rs 38.4

∴ The price of one soap is Rs 38.4

(ii) 15 soaps

Given

Cost of one dozen soaps = Rs 460.80

We know that,

12 soaps = one dozen

Hence the price of fifteen soaps can be calculated as follows:

Price of one soap = $460.80 / 12$

= Rs 38.4

Price of fifteen soaps = 15×38.4

= Rs 576

∴ The price of fifteen soaps is Rs 576

(iii) 3 dozen soaps

Given

Cost of one dozen soaps = Rs 460.80

We know that,

12 soaps = one dozen

3 dozen contains = $(12 \times 3 = 36)$

3 dozen = 36 soaps

Hence the price of 3 dozen soaps can be calculated as follows:

Price of one soap = $460.80 / 12$

= Rs 38.4

Price of 3 dozen soaps = 36×38.4

= Rs 1382.4

∴ The price of three dozen soaps is Rs 1382.4

4. The cost of 35 envelopes is Rs 105. How many envelopes can be bought for Rs 90?

Solution:

Given

Cost of 35 envelopes = Rs 105

Hence the number of envelopes can be bought for Rs 90 can be calculated as below

Number of envelopes bought in Rs 105 = 35

Envelopes bought in Rs 1 = $35 / 105$

Number of envelopes bought in Rs 90 = $35 / 105 \times 90$

= 30

∴ 30 envelopes can be bought in Rs 90

5. If the cost of 8 cans of juice is Rs 280, then what will be the cost of 6 cans of juice?

Solution:

Given

Cost of 8 cans of juice = Rs 280

Hence, cost of 6 cans of juice can be calculated as below

Cost of 1 can juice = $280 / 8$

= Rs 35

Cost of 6 cans of juice = 6×35

= Rs 210

∴ The cost of 6 cans of juice will be Rs 210

6. For Rs 378, 9 cans of juice can be bought, then how many cans of juice can be bought for Rs 504?

Solution:

Given

Amount in which 9 cans of juice can be bought = Rs 378

Number of juice cans bought in Rs 378 = 9 cans

Juice can bought in Rs 1 = $9 / 378$

Number of juice cans bought in Rs 504 = $9 / 378 \times 504$

= 12

∴ 12 cans of juice can be bought in Rs 504

7. A motorbike travels 425 km in 5 hours. How much distance will be covered by it in 3.2 hours?

Solution:

Given

Distance covered by motorbike in 5 hours = 425 km

Distance covered by bike in 3.2 hours can be calculated as below

Distance covered in 1 hour = $425 / 5$

= 85 km

Distance covered by bike in 3.2 hours = 85×3.2

= 272 km

∴ Distance covered by bike in 3.2 hours is 272 km

8. If the cost of a dozen identical articles is Rs 672, what will be the cost of 18 such articles?

Solution:

Given

Cost of a dozen identical articles = Rs 672

We know that,

Number of articles in one dozen = 12

Hence the price of 18 articles can be calculated as below

Price of one article = $672 / 12$

= Rs 56

Price of eighteen articles = 18×56

= Rs 1008

∴ Cost of 18 articles will be Rs 1008

9. A car covers a distance of 180 km in 5 hours.

(i) How much distance will the car cover in 3 hours with the same speed?

(ii) How much time will the car take to cover 54 km with the same speed?

Solution:

(i)

Given

Distance covered by car in 5 hours = 180 km

Hence distance covered by car in 3 hours can be calculated as below

Distance covered by car in 1 hour = $180 / 5$

= 36 km

Distance covered by car in 3 hours = 36×3

= 108 km

∴ Distance covered by car in 3 hours with the same speed will be 108 km

(ii)

Given

Distance covered by car in 5 hours = 180 km

Hence time taken by the car to cover 54 km distance can be calculated as below

Time taken by the car to cover 180 km distance = 5 hours

Time taken by the car to cover 1 km distance = $5 / 180$ hour

Time taken to cover 54 km distance by car = $5 / 180 \times 54$

= 1.5 hours

∴ Time taken to cover 54 km distance by the car is 1.5 hours

10. If it has rained 276 cm in the last 3 days, how many cm of rain will fall in one week (7 days)?

Assume that the rain continues to fall at the same rate.

Solution:

Given

Cm of rainfall in 3 days = 276 cm

Hence, rainfall in one week can be calculated as below

Rainfall in one day = $276 / 3$

= 92 cm

Rainfall in 7 days = 92×7

= 644 cm

Therefore, 644 cm of rain will fall in one week.

11. Cost of 10 kg of wheat is Rs 180

(i) What is the cost of 18 kg of wheat?

(ii) What quantity of wheat can be purchased in Rs 432?

Solution:

(i) Given

Cost of 10 kg of wheat = Rs 180

Hence the cost of 18 kg wheat can be calculated as below

Cost of 1 kg wheat = $180 / 10$

= Rs 18

Cost of 18 kg wheat = 18×18

= Rs 324

∴ The cost of 18 kg wheat is Rs 324

(ii) Given

Cost of 10 kg wheat = Rs 180

Hence the quantity of wheat can be purchased in Rs 432 can be calculated as below

Wheat purchased in Rs 180 = 10 kg

Wheat purchased in Rs 1 = $10 / 180$

Wheat purchased in Rs 432 = $10 / 180 \times 432$

= 24 kg

\therefore 24 kg wheat can be purchased in Rs 432

12. Rohit buys 10 pens for Rs 150 and Manoj buys 14 pens for Rs 168. Who got the pens cheaper?

Solution:

Given

Amount in which Rohit buys 10 pens = Rs 150

Amount in which Manoj buys 14 pens = Rs 168

Cost of 1 pen of Rohit = $150 / 10$

= Rs 15

Cost of 1 pen of Manoj = $168 / 14$

= Rs 12

\therefore The cost of Manoj pen is cheaper than Rohit. Hence Manoj purchase the cheaper pen

13. A tree 24 m high casts a shadow of 15 m. At the same time, the length of the shadow casted by some other tree is 6 m. Find the height of the tree.

Solution:

Given

Tree of 24 height cast a shadow of 15 m

Hence, the length of shadow casted by other tree of 6 m can be calculated as below

Height of tree which casts shadow of 15 m = 24 m

Height of tree which casts shadow of 1 m = $24 / 15$ m

Height of tree which casts the shadow of 6 m = $24 / 15 \times 6$ m

= 9.6 m

\therefore Length of the tree which casts the shadow of 6 m is 9.6 m

14. A loaded truck travels 18 km in 25 minutes. If the speed remains the same, how far can it travel in 5 hours?

Solution:

Given

A loaded truck travels 18 km in 25 minutes

We know

1 hour = 60 min

5 hours = 5×60

= 300 min

Distance covered by the truck in 25 min = 18 km

Distance covered by the truck in 1 min = $18 / 25$ km

Distance covered by the truck in 300 min = $18 / 25 \times 300$ km

= 216 km

∴ Distance travelled by the truck in 5 hours is 216 km



EXERCISE 13(B)

1. Weight of 15 books is 6 kg. What is the weight of 45 such books?

Solution:

Given

Weight of 15 books = 6 kg

Hence weight of 45 books can be calculated as below

Weight of one book = $6 / 15$ kg

Weight of 45 books = $6 / 15 \times 45$

= 18 kg

\therefore The weight of 45 books is 18 kg

2. A made 84 runs in 6 overs and B made 126 runs in 7 overs. Who made more runs per over?

Solution:

Given

Runs scored by A in 6 overs = 84 runs

Runs scored by B in 7 overs = 126 runs

Hence runs scored by A and B per over can be calculated as below

Runs scored by A in one over = $84 / 6$

= 14 runs

Runs scored by B in one over = $126 / 7$

= 18 runs

\therefore Runs scored by B is more than A per over

3. Geeta types 108 words in 6 minutes. How many words would she type in half an hour?

Solution:

Given

Geeta types 108 words in 6 minutes

We know

1 hour = 60 minutes

Half an hour = 30 minutes

Hence number of words typed by Geeta in 30 minutes can be calculated as below

Words typed by Geeta in 1 minute = $108 / 6$

= 18 words

Words typed by Geeta in 30 minutes = 18×30

= 540 words

\therefore Geeta type 540 words in 30 minutes

4. The temperature dropped 18 degree Celsius in the last 24 days. If the rate of temperature drop remains the same, how many degrees will the temperature drop in the next 18 days?

Solution:

Given

Temperature dropped 18 degree Celsius in 24 days

Hence temperature drop in next 18 days can be calculated as below

Temperature drop in 24 days = 18°C

Temperature drop in 1 day = $18^{\circ}\text{C} / 24$

Temperature drop in 18 days = $18 \times 18^{\circ}\text{C} / 24$

= 13.5°C

\therefore Temperature drop in next 18 days will be 13.5°C

5. Mr. Chopra pays Rs 12,000 as rent for 3 months. How much does he has to pay for a year if the rent per month remains same?

Solution:

Given

Rent paid by Chopra for 3 months = Rs 12,000

Hence rent of 12 months can be calculated as below

Rent of 1 month = $12000 / 3$

= Rs 4000

Rent of 12 months = 12×4000

= Rs 48000

\therefore The rent of 12 months is Rs 48000

6. A truck requires 108 litres of diesel for covering a distance of 1188 km. How much diesel will be required by the truck to cover a distance of 3300 km?

Solution:

Given

A truck requires 108 litres of diesel for covering a distance of 1188 km

Diesel required to cover 1188 km distance by a truck = 108 litres

Diesel required to cover 1 km distance by a truck = $108 / 1188$ litres

Diesel required to cover 3300 km distance = $108 / 1188 \times 3300$

= 300 litres

\therefore A truck requires 300 litres of diesel to cover a distance of 3300 km

7. If a deposit of Rs 2,000 earns an interest of Rs 500 in 3 years, how much interest would a deposit of Rs 36,000 earn in 3 years with the same rate of simple interest?

Solution:

Given

Interest earned on deposit of Rs 2000 for 3 years = Rs 500

Hence interest earned on deposit of Rs 36000 for 3 years can be calculated as below

Interest earned on deposit of Rs 2000 for 3 years = Rs 500

Interest earned on deposit of Rs 1 for 3 years = Rs 500 / 2000

Interest earned on deposit of Rs 36000 for 3 years = Rs 36000 \times 500 / 2000
= Rs 9000

\therefore Amount earned on deposit of Rs 36000 in 3 years is Rs 9000

8. If John walks 250 steps to cover a distance of 200 metres, find the distance covered by him in 350 steps.

Solution:

Given

Distance covered by John to walk 250 steps = 200 metres

Hence distance covered by John to walk 350 steps can be calculated as below

Distance covered in one step = 200 / 250

Distance covered in 350 steps = 350 \times 200 / 250 m
= 280 m

\therefore Distance covered by John to walk 350 steps is 280 m

9.25 metres of cloth costs Rs 1,012.50

(i) What will be the cost of 20 metres of cloth of the same type?

(ii) How many metres of the same kind can be bought for Rs 1,620?

Solution:

(i) Given

Cost of 25 metre cloth = Rs 1012.50

Hence the cost of 20 metre cloth can be calculated as below

Cost of 1 metre cloth = Rs 1012.50 / 25

Cost of 20 metre cloth = Rs 20 \times 1012.50 / 25
= Rs 810

\therefore Cost of 20 metre cloth is Rs 810

(ii) Given

Cost of 25 metre cloth = Rs 1012.50

Hence cloth purchased in Rs 1620 can be calculated as below

Cloth purchased by Rs 1012.50 = 25 metre

Cloth purchased by Rs 1 = 25 / 1012.50 m

Cloth purchased by Rs 1620 = 1620 \times 25 / 1012.50 m
= 40 m

\therefore 40 metre cloth can be purchased in Rs 1620

10. In a particular week, a man works for 48 hours and earns Rs 4, 320. But in the next week he worked 6 hours less, how much has he earned in this week?

Solution:

Given

Amount earned by a man for working 48 hours = Rs 4320

Work done by him for 6 hours less than last week = $48 - 6$

= 42 hours

Hence money earned by a man in 42 hours can be calculated as below

Money earned in one hour = $4320 / 48$

Money earned in 42 hours = $42 \times 4320 / 48$

= Rs 3780

\therefore In 42 hours a man earns Rs 3780

