NCERT Solutions for Class 7 Maths Chapter 8: The purpose of NCERT Solutions for Class 7 Maths Chapter 8 is to assist students in using the formulas to compare quantities and compute ratios to address a variety of situations. Students will learn about ratio and proportion in NCERT Solutions for Class 7 Maths Chapter 8, Comparing Quantities. Additionally, they will learn about the unitary method, percentage, and simple interest ideas and how to use them in real-world situations. This chapter also covers the conversion of decimals and fractions into percentages and vice versa.

NCERT Solutions for Class 7 Maths Chapter 8

Below we have provided NCERT Solutions for Class 7 Maths Chapter 8 for students to help them understand the poem better and to score good marks in their examination.

Exercise 8.1 Page: 157

1. Find the ratio of:

(a) ₹ 5 to 50 paise

Solution:-

We know that,

₹ 1 = 100 paise

Then,

₹ 5 = 5 × 100 = 500 paise

Now we have to find the ratio,

= 500/50

= 10/1

So, the required ratio is 10: 1.

(b) 15 kg to 210 g

Solution:-

We know that,

1 kg = 1000 g

Then,

15 kg = 15 × 1000 = 15000 g

Now we have to find the ratio,

= 15000/210

= 1500/21

= 500/7 … [∵ divide both by 3]

So, the required ratio is 500: 7.

(c) 9 m to 27 cm

Solution:-

We know that,

1 m = 100 cm

Then,

9 m = 9 × 100 = 900 cm

Now we have to find the ratio,

= 900/27

= 100/3 … [∵ divide both by 9]

So, the required ratio is 100: 3.

(d) 30 days to 36 hours

Solution:-

We know that,

1 day = 24 hours

Then,

30 days = 30 × 24 = 720 hours

Now we have to find the ratio,

= 720/36

= 20/1 … [∵ divide both by 36]

So, the required ratio is 20: 1.

2. In a computer lab, there are 3 computers for every 6 students. How many computers will be needed for 24 students?

Solution:-

From the question it is given that,

Number of computer required for 6 students = 3

So, number of computer required for 1 student = (3/6)

= ½

So, number of computer required for 24 students = 24 × ½

= 24/2

= 12

∴ Number of computers required for 24 students is 12.

3. Population of Rajasthan = 570 lakhs and population of UP = 1660 lakhs.

Area of Rajasthan = 3 lakh km^2 and area of UP = 2 lakh km^2.

(i) How many people are there per km^2 in both these states?

(ii) Which state is less populated?

Solution:-

(i) From the question, it is given that,

Population of Rajasthan = 570 lakh

Area of Rajasthan = 3 lakh Km^2

Then, population of Rajasthan in 1 km^2 area = (570 lakh)/ (3 lakh km^2)

= 190 people per km^2

Population of UP = 1660 Lakh

Area of UP = 2 Lakh km^2

Then, population of UP in 1 lakh km^2 area = (1660 lakh)/ (2 lakh km^2)

= 830 people per km^2

(ii) By comparing the two states, we find that Rajasthan is the less populated state.

Exercise 8.2 Page: 164

1. Convert the given fractional numbers to percent.

(a) 1/8

Solution:-

In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= (1/8) × 100 %

= 100/8 %

= 12.5%

(b) 5/4

Solution:-

In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= (5/4) × 100 %

= 500/4 %

= 125%

(c) 3/40

Solution:-

In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= (3/40) × 100 %

= 300/40 %

= 30/4 %

= 7.5%

(d) 2/7

Solution:-

In order to convert a fraction into a percentage multiply the fraction by 100 and put the percent sign %.

= (2/7) × 100 %

= 200/7 %

=

$$28\frac{4}{7}\%$$

2. Convert the given decimal fraction to percent.

(a) 0.65

Solution:-

First we have to remove the decimal point,

= 65/100

Now,

Multiply by 100 and put the percent sign %.

We have,

= (65/100) × 100

= 65%

(b) 2.1

Solution:-

First we have to remove the decimal point,

= 21/10

Now,

Multiply by 100 and put the percent sign %.

We have,

= (21/10) × 100

=210%

(c) 0.02

Solution:-

First we have to remove the decimal point,

= 2/100

Now,

Multiply by 100 and put the percent sign %.

We have,

= (2/100) × 100

= 2%

(d) 12.35

Solution:-

First we have to remove the decimal point,

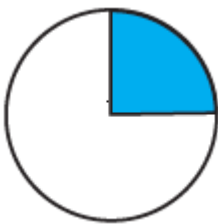= 1235/100

Now,

Multiply by 100 and put the percent sign %.

We have,

= (1235/100) × 100)

= 1235%

3. Estimate what part of the figures is coloured, and hence find the per cent which is coloured.

(i)

Solution:-

By observing the given figure,

We can identify that 1 part is shaded out of 4 equal parts.

It is represented by a fraction = ¼

Then,

= ¼ × 100

= 100/4

= 25%

Hence, 25% of the figure is coloured.

(ii)

Solution:-

By observing the given figure,

We can identify that 3 parts are shaded out of 5 equal parts.

It is represented by a fraction = 3/5

Then,

= (3/5) × 100

= 300/5

= 60%

Hence, 60% of the figure is coloured.

(iii)

Solution:-

By observing the given figure,

We can identify that 3 parts are shaded out of 8 equal parts.

It is represented by a fraction = 3/8

Then,

= (3/8) × 100

= 300/8

= 37.5%

Hence, 37.5% of the figure is coloured.

4. Find:

(a) 15% of 250

Solution:-

We have,

= (15/100) × 250

= (15/10) × 25

= (15/2) × 5

= (75/2)

= 37.5

(b) 1% of 1 hour

Solution:-

We know that, 1 hour = 60 minutes

Then,

1% of 60 minutes

1 minute = 60 seconds

60 minutes = 60 × 60 = 3600 seconds

Now,

1% of 3600 seconds

= (1/100) × 3600

= 1 × 36

= 36 seconds

(c) 20% of ₹ 2500

Solution:-

We have,

= (20/100) × 2500

= 20 × 25

= ₹ 500

(d) 75% of 1 kg

Solution:-

We know that, 1 kg = 1000 g

Then,

75% of 1000 g

= (75/100) × 1000

= 75 × 10

= 750 g

5. Find the whole quantity if

(a) 5% of it is 600

Solution:-

Let us assume the whole quantity be x,

Then,

(5/100) × (x) = 600

X = 600 × (100/5)

X = 60000/5

X = 12000

(b) 12% of it is ₹ 1080.

Solution:-

Let us assume the whole quantity is x,

Then,

(12/100) × (x) = 1080

X = 1080 × (100/12)

X = 540 × (100/6)

X = 90 × 100

X = ₹ 9000

(c) 40% of it is 500k km

Solution:-

Let us assume the whole quantity is x,

Then,

(40/100) × (x) = 500

X = 500 × (100/40)

X = 500 × (10/4)

X = 500 × 2.5

X = 1250 km

(d) 70% of it is 14 minutes

Solution:-

Let us assume the whole quantity is x,

Then,

(70/100) × (x) = 14

X = 14 × (100/70)

X = 14 × (10/7)

X = 20 minutes

(e) 8% of it is 40 liters

Solution:-

Let us assume the whole quantity is x,

Then,

(8/100) × (x) = 40

X = 40 × (100/8)

X = 40 × (100/8)

X = 40 × 12.5

X = 500 liters

6. Convert given percent to decimal fractions and also fractions in simplest forms:

(a) 25%

Solution:-

First convert the given percentage into fraction and then put the fraction into decimal form.

= (25/100)

= ¼

= 0.25

(b) 150%

Solution:-

First convert the given percentage into fraction and then put the fraction into decimal form.

= (150/100)

= 3/2

= 1.5

(c) 20%

Solution:-

First convert the given percentage into fraction and then put the fraction into decimal form.

= (20/100)

= 1/5

= 0.2

(d) 5%

Solution:-

First convert the given percentage into fraction and then put the fraction into decimal form.

= (5/100)

= 1/20

= 0.05

7. In a city, 30% are females, 40% are males and remaining are children. What per cent are children?

Solution:-

From the question, it is given that

Percentage of female in a city =30%

Percentage of male in a city = 40%

Total percentage of both male and female = 40% + 30%

= 70%

Now we have to find the percentage of children = 100 – 70

= 30%

So, 30% are children.

8. Out of 15,000 voters in a constituency, 60% voted. Find the percentage of voters who did not vote. Can you now find how many actually did not vote?

Solution:-

From the question, it is given that

Total number of voters in the constituency = 15000

Percentage of people who voted in the election = 60%

Percentage of people who did not vote in the election = 100 – 60

= 40%

Total number of voters who did not vote in the election = 40% of 15000

= (40/100) × 15000

= 0.4 × 15000

= 6000 voters

∴ 6000 voters did not vote.

9. Meeta saves ₹ 4000 from her salary. If this is 10% of her salary. What is her salary?

Solution:-

Let us assume Meeta's salary be ₹ x,

Then,

10% of ₹ x = ₹ 4000

(10/100) × (x) = 4000

X = 4000 × (100/10)

X = 4000 × 10

X = ₹ 40000

∴ Meeta's salary is ₹ 40000.

10. A local cricket team played 20 matches in one season. It won 25% of them. How many matches did they win?

Solution:-

From the question, it is given that

Total matches played by a local team = 20

Percentage of matches won by the local team = 25%

Then,

Number of matches won by the team = 25% of 20

= (25/100) × 20

= 25/5

= 5 matches.

∴ The local team won 5 matches out of 20 matches.