



# Mathematics

## 7<sup>th</sup> Standard

Based on the New Textbook & New Syllabus for 2019-20

### TERM - II

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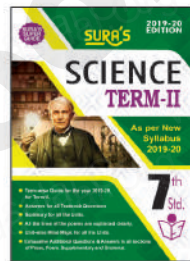
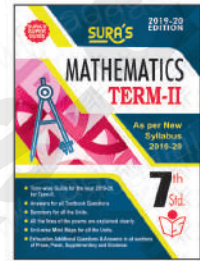
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# Number System

## Representing a Decimal Number

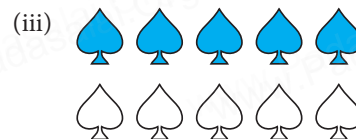
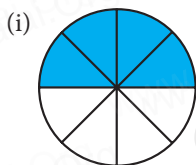
- ◆  $\frac{1}{10}$  (one-tenth of a unit can be written as 0.1 in decimal notation)
- ◆ The dot represents the decimal point and it comes between ones place and tenths place.
- ◆ The place value of the decimal digits of a number are tenths  $\left(\frac{1}{10}\right)$ , hundredths  $\left(\frac{1}{100}\right)$ , thousandths  $\left(\frac{1}{1000}\right)$  and so on.



### TRY THESE

(Text book Page No. 2)

1. Observe the following and write the fraction of the shaded portion and mention in decimal form also.



**Sol : (i)** Total parts = 8  
Shaded parts = 4

Fraction of the shaded portion =  $\frac{4}{8}$

Decimal form of  $\frac{4}{8}$  is 0.5

$$\begin{array}{r} 0.5 \\ 8 \overline{) 4.0} \\ \underline{40} \\ 0 \end{array}$$

**(ii)** Total parts = 10  
Shaded parts = 3

Fraction of the shaded portion =  $\frac{3}{10}$

Decimal form of  $\frac{3}{10}$  is 0.3

$$\begin{array}{r} 0.3 \\ 10 \overline{) 3.0} \\ \underline{30} \\ 0 \end{array}$$





## Think

(Text book Page No. 9)

1. Can you express the denominators of all fractions as powers of 10?

**Sol :** No, we cannot.

Eg:  $\frac{1}{3}, \frac{1}{7}$



## TRY THESE

(Text book Page No. 10)

1. Convert the following fractions into the decimal numbers.

(i)  $\frac{16}{1000}$

(ii)  $\frac{638}{10}$

(iii)  $\frac{1}{20}$

(iv)  $\frac{3}{50}$

**Sol :** (i)  $\frac{16}{1000} = 0.016$

(ii)  $\frac{638}{10} = 63.8$

(iii)  $\frac{1}{20} = \frac{1 \times 5}{20 \times 5} = \frac{5}{100} = 0.05$

(iv)  $\frac{3}{50} = \frac{3 \times 2}{50 \times 2} = \frac{6}{100} = 0.06$

2. Write the fraction for each of the following:

(i) 6 hundreds + 3 tens + 3 ones + 6 hundredths + 3 thousandths.

(ii) 3 thousands + 3 hundreds + 4 tens + 9 ones + 6 tenths.

**Sol :** (i) 6 hundreds + 3 tens + 3 ones + 6 hundredths + 3 thousandths.

$$= 6 \times 100 + 3 \times 10 + 3 \times 1 + 0 \times \frac{1}{10} + 6 \times \frac{1}{100} + 3 \times \frac{1}{1000}$$

$$= 600 + 30 + 3 + 0 + \frac{6}{100} + \frac{3}{1000}$$

$$= 633 + 0.06 + 0.003$$

$$= 633.063$$

(ii) 3 thousands + 3 hundreds + 4 tens + 9 ones + 6 tenths.

$$= 3 \times 1000 + 3 \times 100 + 4 \times 10 + 9 \times 1 + 6 \times \frac{1}{10}$$

$$= 3000 + 300 + 40 + 9 + \frac{6}{10}$$

$$= 3349 + 0.6$$

$$= 3349.6$$

## OBJECTIVE TYPE QUESTIONS

9.  $3 + \frac{4}{100} + \frac{9}{1000} = ?$

- (i) 30.49      (ii) 3049      (iii) 3.0049      (iv) 3.049

**Hint:**  $3 \times 1 + \frac{0}{10} + \frac{4}{100} + \frac{9}{1000} = 3.049$

[Ans : (iv) 3.049]

10.  $\frac{3}{5} = \underline{\hspace{2cm}}$

- (i) 0.06      (ii) 0.006      (iii) 6      (iv) 0.6 [Ans : (iv) 0.6]

**Hint:**  $\frac{3}{5} = \frac{3 \times 2}{5 \times 2} = \frac{6}{10} = 0.6$

11. The simplest form of 0.35 is

- (i)  $\frac{35}{1000}$       (ii)  $\frac{35}{10}$       (iii)  $\frac{7}{20}$       (iv)  $\frac{7}{100}$  [Ans : (iii)  $\frac{7}{20}$ ]

**Hint:**  $0.35 = \frac{35}{100} = \frac{35 \div 5}{100 \div 5} = \frac{7}{20}$

## ADDITIONAL QUESTIONS

1. Explain the following as fractions.

- (i) A jar containing 3.6 litres of milk.  
(ii) A cup containing 9.63 mg of medicine.

**Sol : (i)**  $3.6 = 3 + \frac{6}{10} = 3 + \frac{3}{5} = 3\frac{3}{5}$  litres of milk

**(ii)**  $9.63 = 9 + \frac{6}{10} + \frac{3}{100} = \frac{900 + 60 + 3}{100} = \frac{963}{100}$  mg of medicine.

2. Convert into decimal.

- (i) Three hundred three and nine hundredths.  
(ii) Six and fifty five thousands

**Sol : (i)** Three hundred three and nine hundredths  
 $= 303 + \frac{9}{100} = 303 + 0 \times \frac{1}{10} + 9 \times \frac{1}{100} = 303.09$

**(ii)** Six and fifty five thousandths  
 $= 6 + \frac{55}{1000} = 6 + \frac{5}{100} + \frac{5}{1000}$   
 $= 6 + \frac{0}{10} + \frac{5}{100} + \frac{5}{1000} = 6.055$

## Representing Decimal Numbers on the Number line

### DIVISION OF INTEGERS



#### TRY THESE

(Text book Page No. 22)

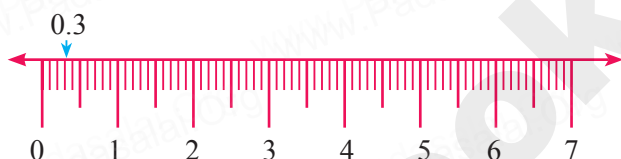
1. Mark the following decimal numbers on the number line.

- (i) 0.3                      (ii) 1.7                      (iii) 2.3

Sol : (i) 0.3

We know that 0.3 is more than 0, but less than 1.

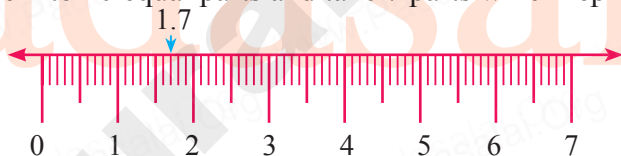
There are 3 tenths in it. Divide the unit length between 0 and 1 on the number line into 10 equal parts and take 3 parts, which represent 0.3.



- (ii) 1.7

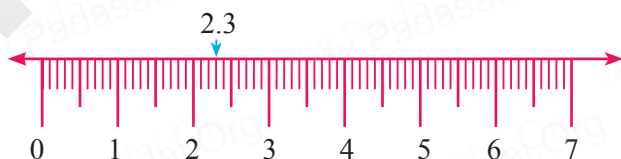
We know that 1.7 is more than 1, but less than 2.

There are one ones and 7 tenths in it. Divide the unit length between 1 and 2 on the number line into 10 equal parts and take 7 parts which represents  $1.7 = 1 + 0.7$



- (iii) We know that 2.3 is more than 2 and less than 3.

There are 2 ones and 3 tenths in it. Divide the unit length between 2 and 3 into 10 equal parts and take 3 parts, which represents  $2.3 = 2 + 0.3$



2. Identify any two decimal numbers between 2 and 3.

Sol : 2.5 and 2.9

3. Write any decimal number which is greater than 1 and less than 2.

Sol : 1.7, 1.9, 1.6,.....

## EXERCISE 1.5

### Miscellaneous Practice problems

1. Write the following decimal numbers in the place value table.

(i) 247.36

(ii) 132.105

**Sol :**

(i)

247.36	Hundreds	Tens	Ones	Tenths	Hundredths
	2	4	7	3	6

(ii)

132.105	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
	1	3	2	1	0	5

2. Write each of the following as decimal number.

(i)  $300 + 5 + \frac{7}{10} + \frac{9}{100} + \frac{2}{100}$

(ii)  $1000 + 400 + 30 + 2 + \frac{6}{10} + \frac{7}{100}$

**Sol :**

(i)  $300 + 5 + \frac{7}{10} + \frac{9}{100} + \frac{2}{100} = 305.792$

(ii)  $1000 + 400 + 30 + 2 + \frac{6}{10} + \frac{7}{100} = 1432.67$

3. Which is greater?

(i) 0.888 (or) 0.28

(ii) 23.914 (or) 23.915

**Sol :** (i) 0.888 (or) 0.28

The whole number parts is equal for both the numbers.

Comparing the digits in the tenths place we get,  $8 > 2$ .

$\therefore 0.888 > 0.28$

0.888 is greater.

(ii) 23.914 or 23.915

The whole number part is equal in both the numbers.

Also the tenth place and hundredths place are also equal.

$\therefore$  Comparing the thousandths place, we get  $5 > 4$ .

$23.915 > 23.914$

$\therefore 23.915$  is greater.



16. By how much is  $\frac{9}{10}$  km less than 1 km. Express the same in decimal form.

**Sol :** Given measures are 1 km and  $\frac{9}{10}$  km.

i.e., 1 km and 0.9 km.

Difference =  $1.0 - 0.9 = 0.1$  km.



## UNIT TEXT

Time: 1 hr

Max Marks : 25

I. Choose the best answer from the options given below.

$5 \times 1 = 5$

1. Lowest form of decimal 0.005 is

(i)  $\frac{3}{1000}$

(ii)  $\frac{1}{200}$

(iii)  $\frac{2}{200}$

(iv)  $\frac{5}{100}$

2. Which of the following decimals is the smallest?

(i) 0.37

(ii) 1.52

(iii) 0.087

(iv) 0.105

3. The decimal 0.238 is equal to

(i)  $\frac{119}{500}$

(ii)  $\frac{238}{25}$

(iii)  $\frac{119}{25}$

(iv)  $\frac{119}{50}$

4. 0.7499 lies between

(i) 0.7 and 0.74

(ii) 0.75 and 0.79

(iii) 0.749 and 0.75

(iv) 0.74992 and 0.75

5. 0.023 lies between

(i) 0.2 and 0.3

(ii) 0.02 and 0.03

(iii) 0.03 and 0.029

(iv) 0.026 and 0.024

II. Answer the following questions.

$5 \times 2 = 10$

6. Write three hundred five and four hundredth as decimal form.

7. Write 3.4 as fraction in lowest form.

8. Write  $300 + 40 + 5 + \frac{2}{100}$  as decimals.

9. Which is greater 1 or 0.99?

10. Convert 5244 g to kg.

III. Answer the following questions.

$2 \times 5 = 10$

11. Arrange 12.143, 12.125, 12.105, 12.402 and 12.214 in ascending order.

12. Which one is greater 1 m 40 cm + 60 cm or 2.6 m?