ATOMIC ENERGY CENTRAL SCHOOL – 1

Anushaktinagar, Mumbai – 400 094

Subject: Mathematics

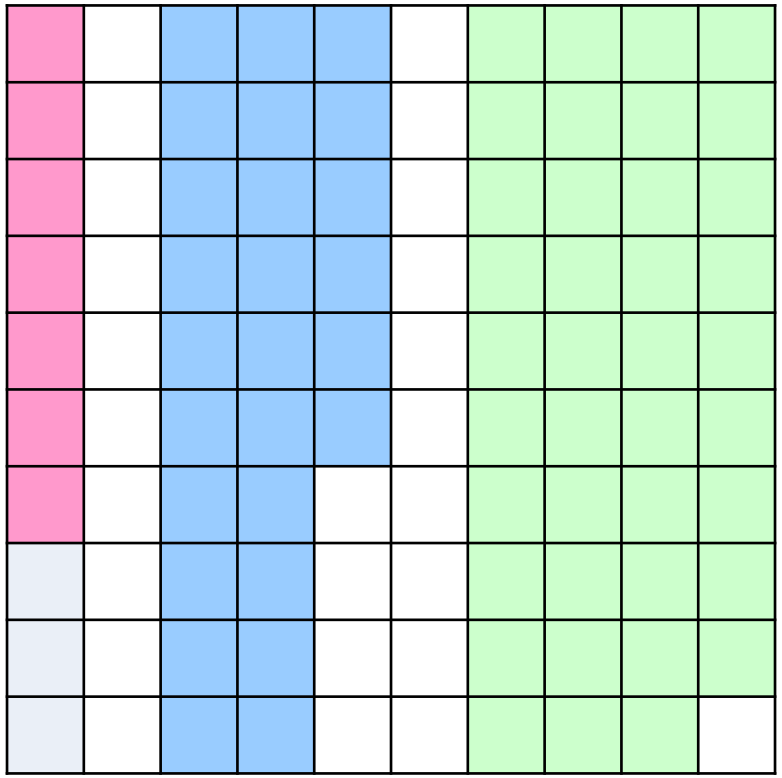
Chapter 8

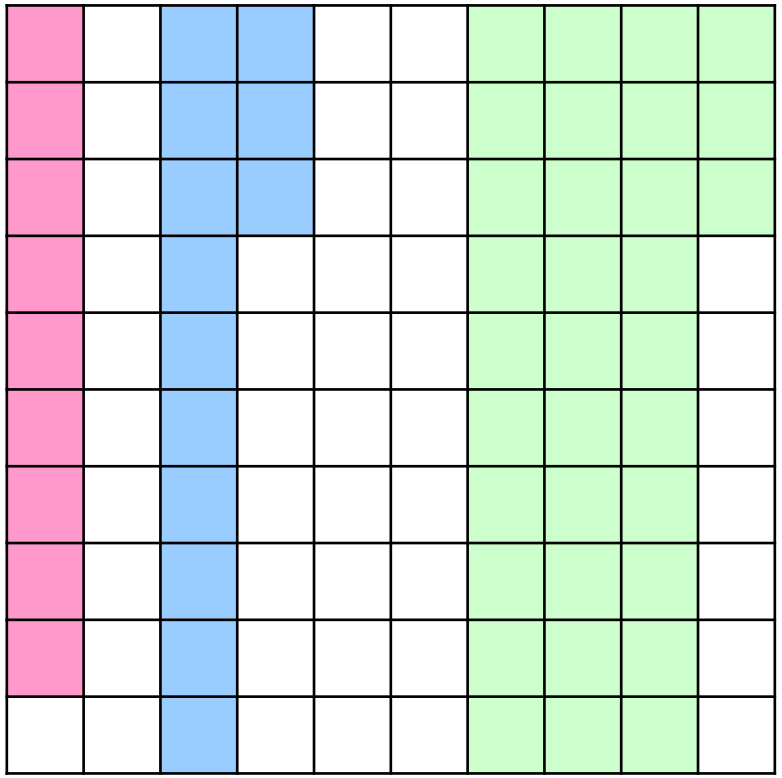
DECIMALS

Module 2

COMPARING DECIMALS

Look at the figures below.





Colour	Shaded portion	Fraction	Decimal	comparison
Pink	7 squares I box	$\frac{7}{100}$	0.07	0.07 < 0.09
	9 squares II box	$\frac{7}{100}$	0.09	
Blue	26 squares I box	$\frac{7}{100}$	0.26	0.26 > 0.13
	13 squares II box	$\frac{7}{100}$	0.13	
Green	39 squares I box	$\frac{7}{100}$	0.39	0.39 > 0.33
	33 squares II box	$\frac{7}{100}$	0.33	

Any two decimals numbers can be compared among themselves. For comparing two decimals we use the following rules.

Rules for comparing decimals:

1) If the given decimals are ‘unlike decimals’, then first change them into ‘like decimals’.
2) If the given decimals have the same whole number, compare them by their tenths. If they have the same tenths, compare them by their hundredths and so on.

LIKE DECIMALS: The decimals having the same number of decimals places are known as Like Decimals.

For eg: (a) 2.0, 4.8, 5.1, 6.2 (b) 4.20, 15.36, 781.95, 0.43

(c) 0.253, 1.625, 15.005, 102.304

UNLIKE DECIMALS: The decimals having different number of decimals places are known as Unlike Decimals. For eg: 2.5, 6.37, 4.25, 29.1, 4.708, 10.364

Eg. 1) Which is greater?

(a) 1.25 or 2.250 (b) 12.589 or 6.589 (c) 7.008 or 7.080

(d) 9.159 or 9.150 (e) 22.35 or 42.75 (f) 50.05 or 50.005

Answer:

(a)1.25 or 2.250

Here, the whole number part of 1.25 is smaller than the whole number part of 2.250. ∴ $1.25 < 2.250$

(a)12.589 or 6.589

Here, whole number part of 12.589 is greater than whole number part of 6.589. ∴ $12.589 > 6.589$. Moreover, the decimal part of the two fractions are same.

(a)7.008 or 7.080 – In these two decimals, the whole numbers are the same. So let us compare the decimal part only.

.008 = $\frac{8}{1000}$ and .080 = $\frac{8}{100}$. The place value of 8 in the first decimal is 8 thousandths whereas in the second decimal it is 8 hundredths. $\therefore$ 7.008 < 7.080

(a)9.159 or 9.150 – In these two decimals, the whole numbers are the same. So let us compare the decimal part only. In the decimal part also the first two digits are the same. Clearly, the last digits when compared tell us that 9 > 0

$\therefore$ 9.159 < 9.150

(a)50.05 or 50.005 - In these two decimals, the whole numbers are the same. So let us compare the decimal part only. In the decimal part also the first digit is the same. .05 = $\frac{5}{100}$ and 0.005 = $\frac{5}{1000}$ $\therefore$ 50.05 > 50.005

Eg. 2) Fill in the blanks with < or > to complete the statements.

(a) 5. 25 > 5.0 (b) 0.25 < 0.255 (c) 6.8 < 16.2

(d) 0.39 < 0.72 (e) 0.93 < 0.99 (f) 0.109 > 0.83

ASSIGNMENT: Complete Exercise 8.3 of mathematics text book

USE OF DECIMALS

Decimals are used in many ways in our lives. For example in expressing units of money, length, weight etc.

MONEY

We know that 100 paise = 1 rupee

$\therefore$ 1 paise = Rs $\frac{1}{100}$ = Rs 0.01

So, 5 paise = Rs 0.05 and 75 paise = Rs 0.75

4 rupees 50 paise = Rs 4.50, 18 rupees 9 paise = Rs 18.09

LENGTH

10 mm (Millimetres) = 1 cm (Centimetres)

1 mm = $\frac{1}{10}$ cm = 0.1 cm, 3 mm = 0.3 cm, 19 mm = 1.9 cm, 256 mm = 25.6cm

8cm 5 mm = 8.5 cm, 12 cm and 6mm = 12.6 cm

- 100 cm = 1 metre (m)

1 cm = $\frac{1}{100}$ m = 0.01 m

30 cm = 0.30 m, 158 cm = 1.58 m, 17.7 cm = 17.07 m, 609 cm = 60.9 m

10 m 45 cm = 10.45 m, 2 m 50 cm = 2.50 m, 12 m 5 cm = 12.05 m

- 1000 m = 1 km

1m = $\frac{1}{1000}$ m = 0.001 km

2 m = 0.002 km 100 m = 0.100 km 250 m = 0.250 km

1569 m = 1.569 km 1 km 12m = 1.012 5 km 5 m = 5.005 km

WEIGHT

1000 grams (g) = 1 kilogram (kg)

1 g = $\frac{1}{1000}$ kg = 0.001 kg

5 g = 0.005 kg 25 g = 0.25 kg 575g = 0.575 kg

3 kg 20 g = 3.020 kg 1 kg 250 g = 1.250 kg 0 kg 5 g = 0.005 kg

Eg .4) Write in decimals.

(a) 2 rupees 5 paise (b) 2 rupees 50 paise

(c) 20 rupees 7 paise (d) 21 rupees 75 paise

Answer: (a) 2 rupees 5 paise = Rs 2.05 (b) 2 rupees 50 paise = Rs 2.50

(c) 20 rupees 7 paise = Rs 20.07 (d) 21 rupees 75 paise = Rs 21.75

Eg 5) Write the following as decimals.

a) 4 mm as cm b) 7 cm 5 mm as cm c) 52 m as km

d) 340 m as km e) 2008 m as km

Answer: a) 4 mm = 0.4 cm

b) 7 cm 5 mm = 7.5 cm

c) 52 m = 0.52 km

d) 340 m = 0.340 km

e) 2008 m =2.008 km

ASSIGNMENT: Complete Exercise 8.4 of mathematics text book.

Prepared by

Y.VASANTI PURUSHOTHAM

TGT (SS)

AECS-1, MUMBAI