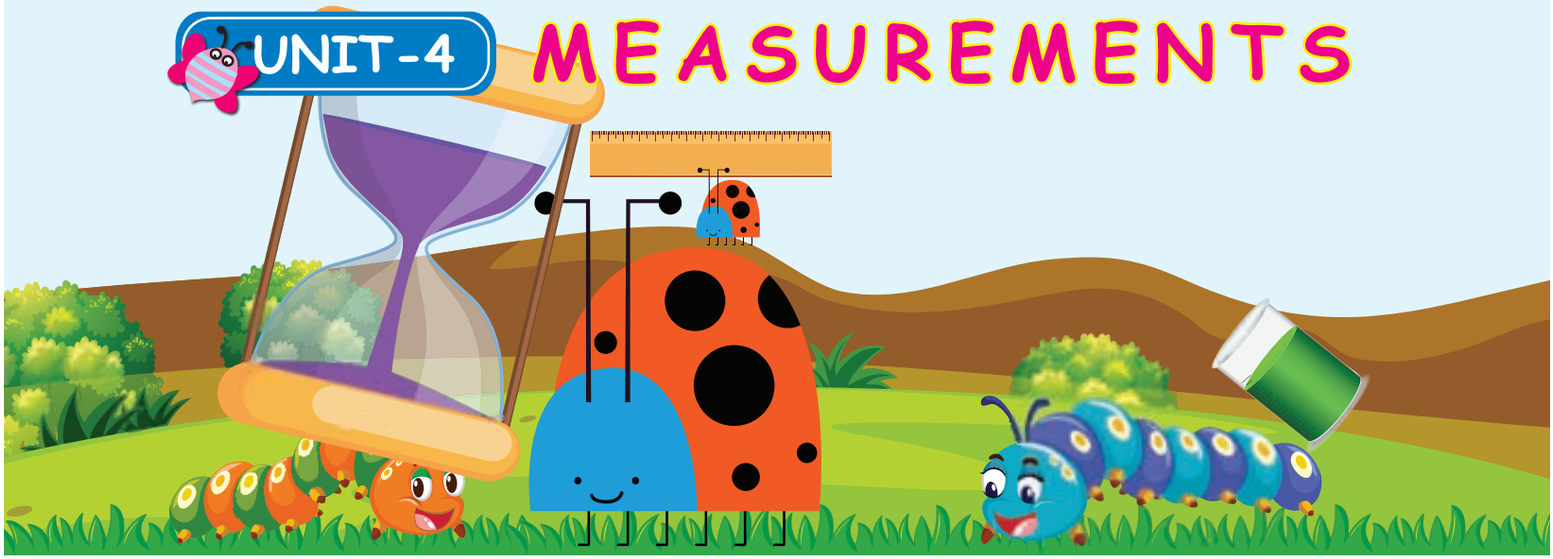
UNIT-4 MEASUREMENTS

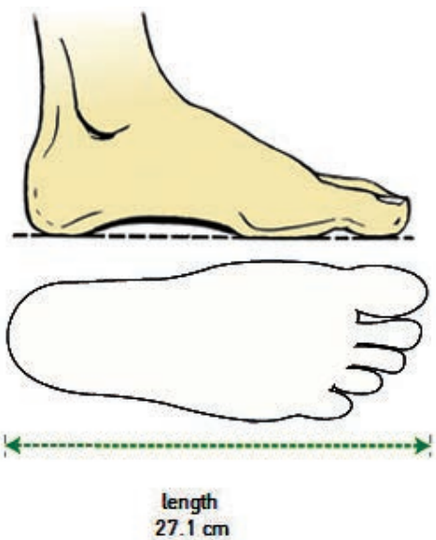


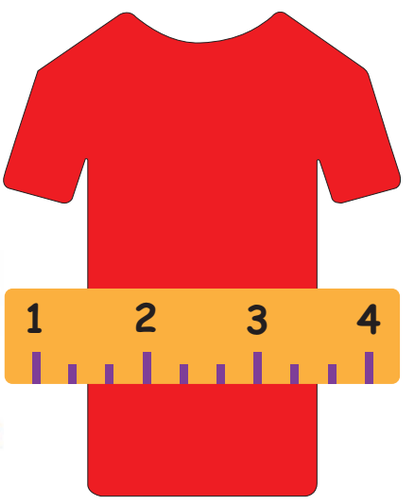
4.1 Understand relationship between metre and centimetre.

MN7FR

Children can measure (i) the size of their foot and find out the slipper size. (ii) sleeve size of their shirt

Let the children compare the measurement and find the longest and shortest foot size and sleeve size.





Kavitha accompanied her friends to the festival. All of them bought a lot of stuff in the shops. They came back home and discussed about their purchase.

Kavitha : I bought a ribbon. Mala what did you buy?

Mala : I bought a cricket bat. Mary, please show your toy.

Mary : I bought a toy train.

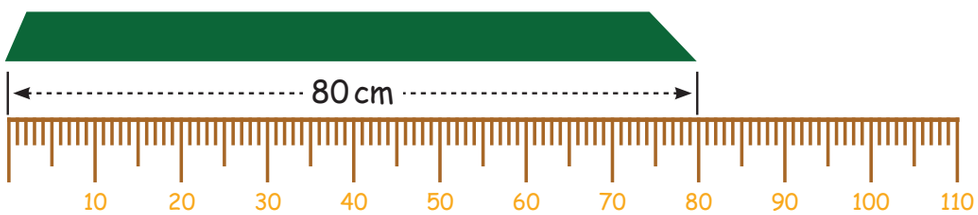
Sharmila : See friends. I have a beautiful toy car

Banu : My favouite toy lorry is very attractive

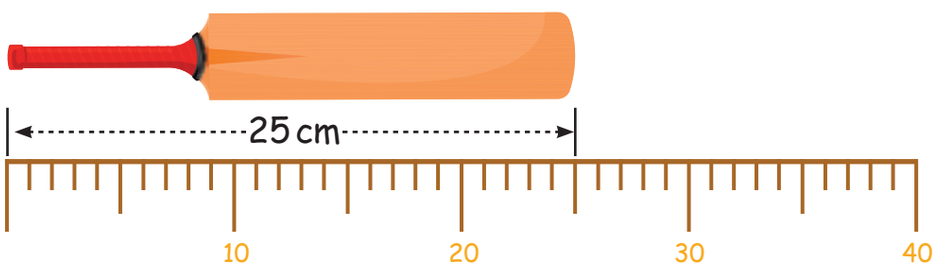
Kavitha : All the toys are very nice. Let us measure our toys. Which is the longest among them?

The length of toys and ribbon are given below.

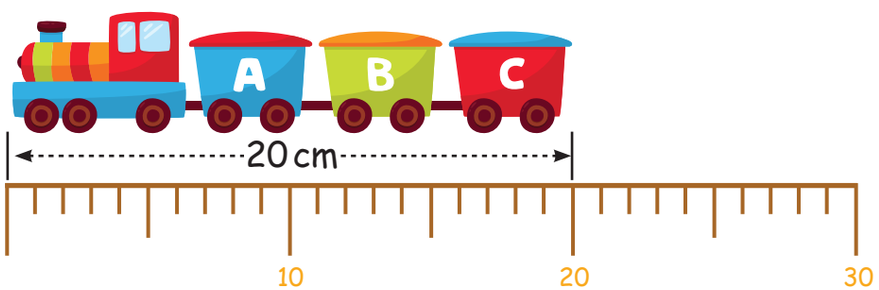
Kavitha measures her Ribbon.



Mala measures her Toy bat.

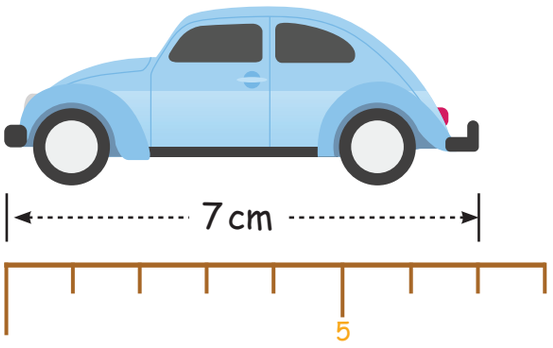


Mary measures her Toy train.



Teacher can help the children to use the ruler.

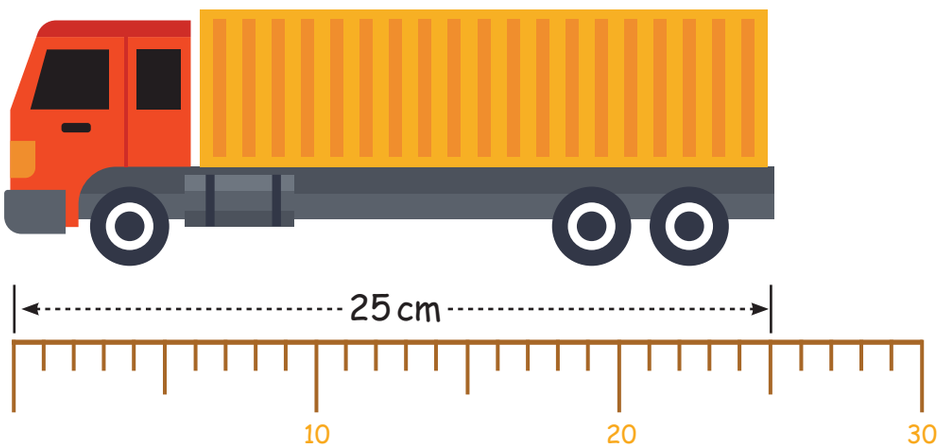
Sharmila measures her Toy car.



Centimetre can be written as "cm"

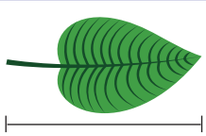
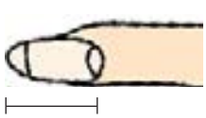
We use scale to measure small length. Play ground, Classroom height are measured by tape.

Banu measures her Toy lorry.



Activity

Measure the following things and complete the table given below.

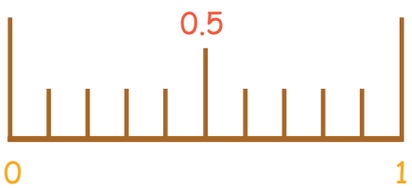
S. NO	Things	Approximate length	Correct length
1			
2			
3			

4			
5			
6			

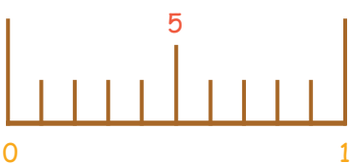
Children can you measure the tip of the following things by using the ruler?



Yes, the measurement between 0 and 1 is 0.5 cm.



= 1 cm



= 10 millimetre

10 millimetre	=	1 centimetre
100 centimetre	=	1 metre
1000 m	=	1 Kilometre
1000 metre	=	1 kilometre
1 mile	=	1.6 kilometre

Think

How can you measure the distance between villupuram and cuddalore?

Group Activity

Ask the children to measure the length of the following things.

a. Black board **b.** Cupboard **c.** Table **d.** Wallclock **e.** Classroom

4.2 Conversion of Metre into Centimetre.

EXAMPLES

1. Convert 5 m into cm

5 m = 5 x 100 cm
5 m = 500 cm

2. Convert 13 m into cm

13 m = 13 x 100 cm
13 m = 1300 cm.

3. Convert 4 m 35 cm into cm

1m = 100 cm

Note:
To convert metre into centimetres multiply the given number by 100

Step: 1	Step: 2	Another Method
4 m = 4 x 100 cm	400 cm	4 m 35 m = 4 x 100 + 35 cm
	+ 35 cm	= 400 + 35
	435 cm	4 m 35 cm = 435 cm

4 m 35 cm = 435 cm

4.3 Conversion of Centimetre into Metre.

EXAMPLES

100cm = 1m

1. Convert 700 cm into metre

700 ÷ 100 = 7 m

700 cm = 7 m

2. Convert 536 cm into metre

536 cm = 500 cm + 36 cm

= (500 ÷ 100) + 36 cm

= 5 m + 36 cm

536 cm = 5 m 36 cm

Activity

1.

Metre	1	2	3	4	5	6	7	8	9
Centimetre	100	200	300						

2. Using the metre scale, find the length of the classroom door and convert the measurement from metre into centimetre.

Exercise 4.1

Convert into centimetre

1. 3 m = _____ cm
2. 37 m = _____ cm
3. 5 m 9 cm = _____ cm
4. 7 m 35 cm = _____ cm

Convert into metre

1. 600 cm = _____ m
2. 3600 cm = _____ m
3. 647 cm = _____ m
4. 304 cm = _____ m

4.4 Addition and subtraction of standard measurement

Addition without Regrouping

EXAMPLE

Add 21 m 45 cm and 68 m 23 cm.

m	cm
21	45
+ 68	23
89	**68**

step.1 Start from **cm** :(45+23) cm = 68 cm

write 68 under the **Centimetre** column.

Step.2 Then add **m** : 21 m + 68 m = 89 m

Write 89 under the **metre** column.

21 m 45 cm + 68 m 23 cm = 89 m 68 cm

Addition with Regrouping

EXAMPLE

Add 34 m 91 cm + 25 m 42 cm

	m	cm
	① ①	
	34	91
+	25	42
	60	**33**

Step: 1 Start from cm
91 cm + 42 cm = 133 cm
In 133 cm, write 33 under cm column and then add this 1 cm to the metre column.

Step: 2 Add 1 m + 34 m + 25 m = 60 m

34 m 91 cm + 25 m 42 cm = 60 m 33 cm

Exercise 4.2

Add the following.

1.

	m	cm
	41	29
+	26	75

2.

	m	cm
	70	23
+	31	45

3.

	m	cm
	35	08
+	29	26

4.

	m	cm
	53	45
+	34	68

5.

	m	cm
	51	30
+	21	12

6.

	m	cm
	60	45
+	24	75

Subtraction without Regrouping

EXAMPLE

	m	cm
	48	36
-	18	24
	30	**12**

Subtract 18 m 24 cm from 48 m 36 cm

step: 1 Subtract centimetre column
(36-24) = 12 cm

step: 2 Subtract metre column
48-18 = 30 m

Subtraction with Regrouping

EXAMPLE

Subtract 73 m 44 cm – 54 m 75 cm

	m	cm
	72	144
	~~73~~	44
-	54	75
	18	**69**

75 cm cannot be subtracted from 44 cm. So take 1m from 73 m and then add with 44 we get 100 + 44 = 144 cm.

step: 1 144 cm -75 cm = 69 cm

step: 2 72 cm -54 cm = 18 cm

Exercise 4.3

Subtract the following

1.

	m	cm
	93	25
-	20	12

2.

	m	cm
	38	90
-	26	60

3.

	m	cm
	75	22
-	56	35

4.

	m	cm
	27	81
-	16	94

5.

	m	cm
	95	80
-	46	60

6.

	m	cm
	95	42
-	37	85

EXAMPLE

Mala bought 18 m 73 cm of Green ribbon and 27 m 65 cm of red ribbon for decorating the hall. What is the total length of the ribbon?

Answer:

Length of the Green ribbon =

Length of the red ribbon =

Total length of the ribbon =

	m	cm
	① ①	
	18	73
+	27	65
	46	**38**

Total length of the ribbon is **46 m 38 cm.**

EXAMPLE

Latha purchased 42 m 52 cm rope and she used 17 m 15 cm rope to tie a ponny. Find the remaining length of the rope she had.

Answer:

		m	cm
		3 12	4 12
Rope purchased	=	~~42~~	~~52~~
Rope given to ponny	=	- 17	15
Remaining rope	=	**25**	**37**

Remaining length of the rope is **25 m 37 cm.**

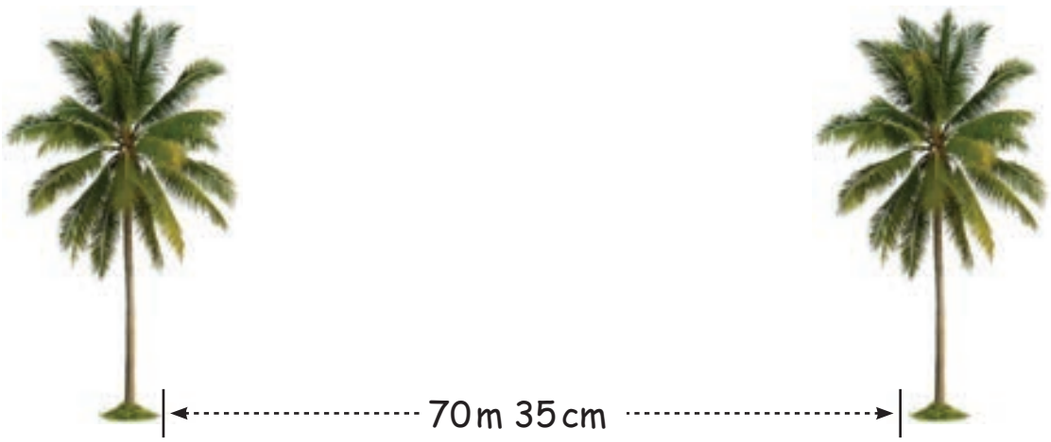
Life Oriented Problems

Exercise 4.4

1. Deenu bought 15 m 43 cm of shirt material and 23 m 94 cm of trouser material. Find the total length of the material bought by him.
2. A fisherman bought 2 nets. The length of first and second nets are 23 m 43 cm and 25 m 63 cm. What is the total length of nets?
3. Agathiya bought 70 m 42 cm of wire to fence his garden. He used only 43 m 51 cm of wire. Find the length of the remaining wire.
4. A shopkeeper sold 37 m 69 cm cloth out of 93 m 75 cm in stock. How much stock is left with him?
5. I bought 125 metres of orange fabric and 50 metres of yellow fabric in a fabric shop. I have used 13 metres of the orange fabric and 12 metres of yellow fabric. How many metres of fabric is remaining with me?
6. Velu is 1 m 15 cm tall. Her friend Babu is 1 m 30 cm tall. Who is taller and by how much?

4.5 Solving problem involving length and distances.

EXAMPLE



The distance between two coconut trees is 70 m 35 cm.
Suthan walked from first tree to second tree.
Then he returned to first tree. How much distance did he cover?

		m	cm
			1
Suthan went to 2nd tree	=	70	35
Suthan returned to 1st tree	=	+ 70	35
		140	**70**

Total distance = 140 m 70 cm

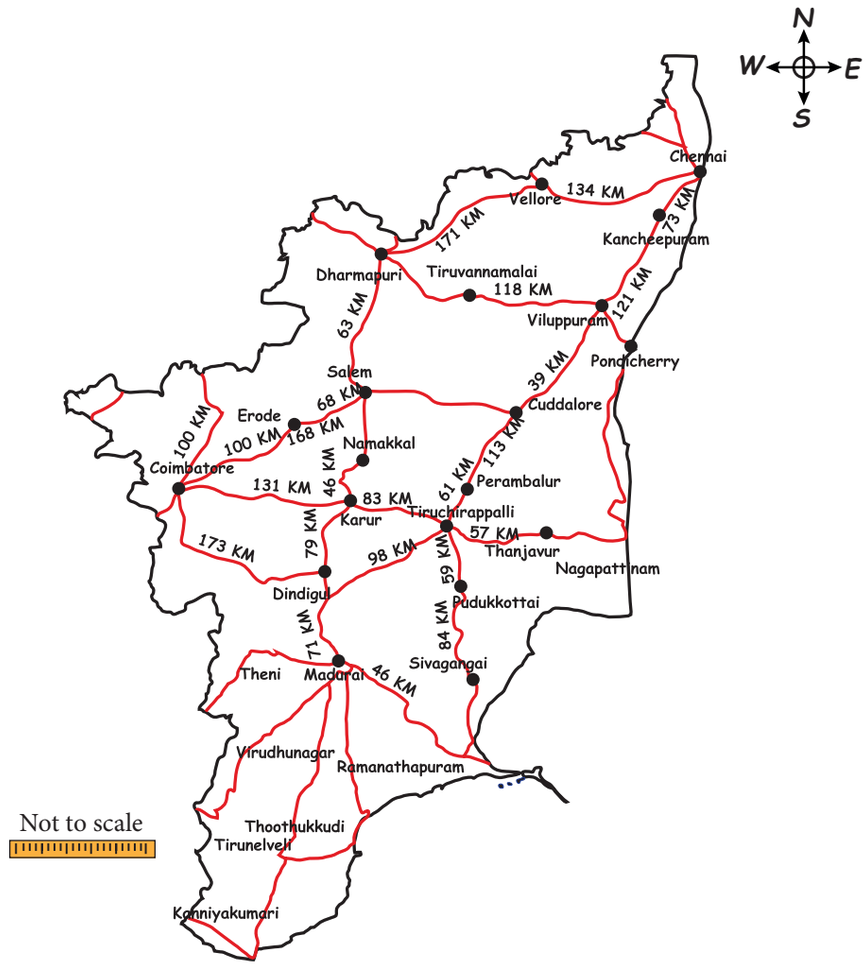
Activity

Measure the height of any ten of your classmates and write in centimetre.

Group Activity

Observe the map and answer the following

1. Which is the longest route from cuddalore to Chennai?
2. Which is the shortest route from cuddalore to Chennai?
3. Find the longest and the shortest distance.



4. Find the shortest distance between (i) Madurai to Chennai (ii) Trichy to Coimbatore (iii) Chennai to Coimbatore.

4.6 Estimation

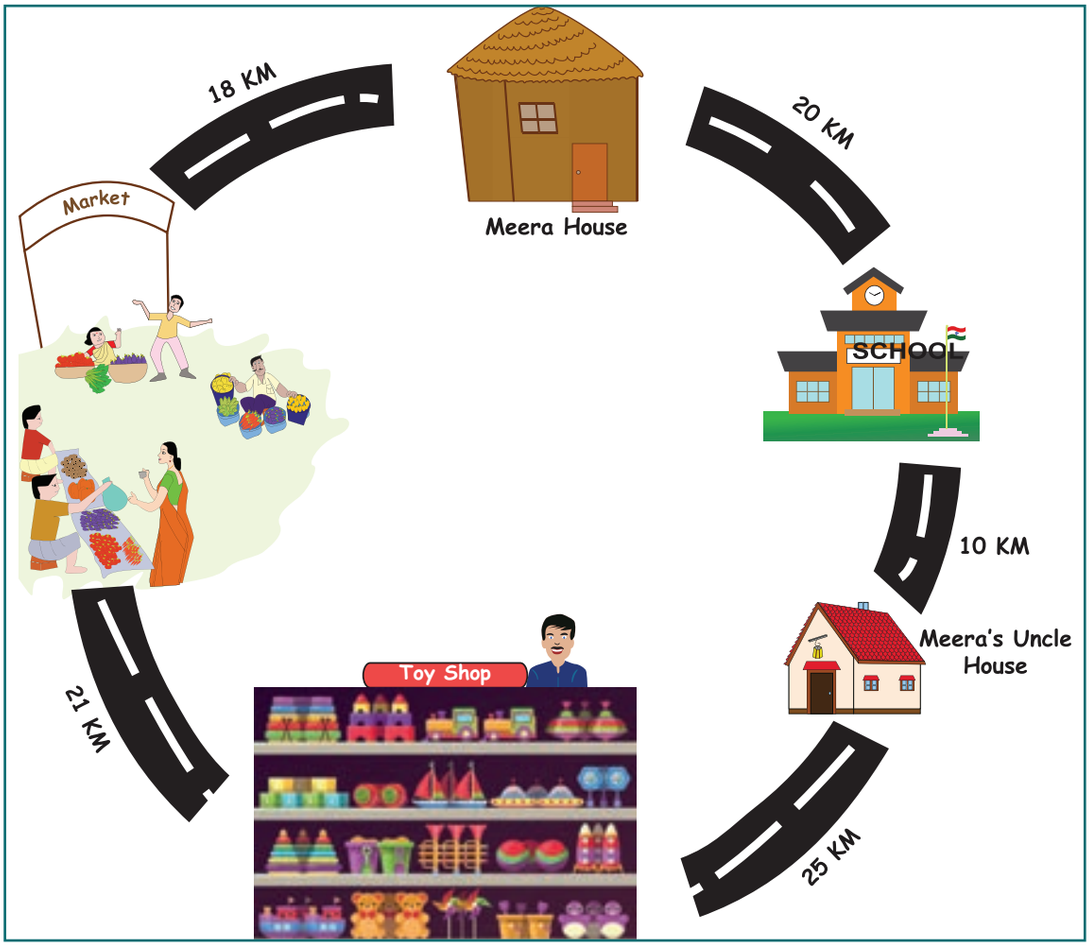
Estimating and measuring length and distance

We can estimate some lengths and distances using approximate values for measurements. For example, the length of our black board is 1 metre.

Now let us try to estimate the length of the following.

1. Distance between your place and black board.
2. Distance between table and cupboard.
3. Distance between office room and your classroom

1. Look at the map and complete the following.



1. The longest distance between Meera's house and the fruit shop is _____.
2. The shortest distance between Meera's house and Meera's uncle house _____.
3. The longest distance between Meera's uncle house and market _____.
4. The shortest distance between school and fruit shop _____.
5. Which place is the longest from Meera's house _____.
6. Which place is the shortest from Meera's house _____.
7. Distance between Meera's house and the School _____.

Exercise 4.5

4OL29

1. Convert into cm

a) 5 m b) 7 m c) 9 m d) 16 m

2. Convert into m

a) 6000 cm b) 4000 cm c) 13000 cm d) 17000 cm

3. Add

a.

m	cm
4	75
+ 3	18

b.

m	cm
25	53
+ 18	24

c.

m	cm
48	72
+ 14	34

4. Subtract

a.

m	cm
9	28
- 3	14

b.

m	cm
63	47
- 36	24

c.

m	cm
96	32
- 20	48

5. Raju used 13 m 25 cm ribbon for making his project. If he had bought 20 m of ribbon, How much ribbon is left with him?

6. The distance between bus stand and school is 81 m 40 cm and the distance between school and temple is 20 m 10 cm. What is the total distance from bus stand to temple ?

7. Arul has a 4 metre long piece of wood. He wants to cut it into 2 equal lengths. How long should each piece be in millimetres?

8. Amudha knows tailoring. She bought 10 metre long cloth. She needs 4 curtains to be stitched. Each curtain's height is 160cm. Would she be able to stitch all curtains? If some cloth is left behind, how much would it be?