

NCERT solution Motion and Measurements of distances

Question 1

Give two examples each, of modes of transport used on land, water and air.

Answer

On Land	Bicycle, Car, Bus, train
On Water	Ship, Motor boat, Ferry
On Air	Aero plane, Glider, Helicopter

Question 2

Fill in the blanks:

- (i) One metre is _____ cm.
- (ii) Five kilometre is _____ m. (1 Km = 1000m)
- (iii) Motion of a child on a swing is _____.
- (iv) Motion of the needle of a sewing machine is _____.
- (v) Motion of wheel of a bicycle is_____.

Answer

- i)** 100
- ii)** 5000
- iii)** Periodic Motion
- iv)** Periodic Motion
- v)** Circular Motion

Question 3

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Why can a pace or a footstep not be used as a standard unit of length?

Answer

A footstep not be used as a standard unit of length because the size of pace and footstep vary from person to person. This will lead to confusion while measuring the lengths by different persons. So We should use standard units like International System of Units (SI Units).

Question 4

Arrange the following lengths in their increasing magnitude:
1 metre, 1 centimetre, 1 kilometre, 1 millimetre

Answer

1 millimetre < 1 centimetre < 1 metre < 1 kilometre

Question 5

The height of a person is 1.65 m. Express it into cm and mm.

Answer

As $1\text{ m} = 100\text{ cm}$ and $1\text{ cm} = 10\text{ mm}$

So we can say that

$$1.65\text{ m} = 1.65 \times 100\text{ cm} = 165\text{ cm}$$

$$\text{Also, } 1.65\text{ m} = 165\text{ cm} = 165 \times 10\text{ mm} = 1650\text{ mm}$$

Question 6

The distance between Radha's home and her school is 3250 m. Express this distance into km.

Answer

Since $1\text{ m} = 1/1000\text{ km}$

$$\text{So } 3250\text{ m} = 3250 / 1000 = 3.250\text{ km}$$

Question 7

While measuring the length of a knitting needle, the reading of the scale at one end is 3.0 cm and at the other end is 33.1 cm. What is the length of the needle?

Answer

Length of the needle = Final reading - Starting Reading
= 33.1 cm - 3.0 cm = 30.1 cm

Question 8

Write the similarities and differences between the motion of a bicycle and a ceiling fan that has been switched on.

Answer

Similarity	Both ceiling fan and bicycle exhibit circular motion.
Difference	Bicycle shows rectilinear motion while ceiling fan does not.

Question 9

Why could you not use an elastic measuring tape to measure distance? What would be some of the problems you would meet in telling someone about a distance you measured with an elastic tape?

Answer

Since the tape is stretchable, its measurements will be inaccurate. Therefore, we cannot use it as measuring tape. While measuring a distance, we need to tell someone how much tape has been stretched which is difficult to measure. It leads to incorrect measurements.

Question 10

Give two examples of periodic motion.

Answer

Pendulum, Guitar String