INDIAN SCHOOL AL WADI AL KABIR		
Class: VI	**DEPARTMENT: SCIENCE 2026-27**	**DATE: 11-11-2026**
WORKSHEET NO: 8 WITH ANSWERS	**TOPIC: MEASUREMENT OF LENGTH AND MOTION**	**NOTE: A4 FILE FORMAT**
CLASS & SEC:	**NAME OF THE STUDENT:**	**ROLL NO.**

I. OBJECTIVE-TYPE QUESTIONS

1. A student needs to measure the length of a wooden block using a plastic scale whose zero mark and the first 1.5 cm are broken off. The student aligns one end of the block at the 2.0 cm mark and observes that the other end reaches the 11.6 cm mark. What is the correct length of the wooden block?

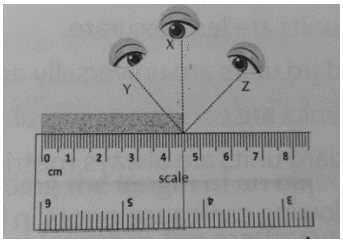
(a) 11.6 cm

(b) 13.6 cm

(c) 9.6 cm

(d) 8.1 cm

2. The image shows a student measuring the length of a line segment using a ruler.



Which of the following statements is correct?

(a) The measurement will be accurate regardless of the position of the eye.
(b) The measurement will be inaccurate if the eye is positioned towards the Y and Z marked point.
(c) The ruler cannot measure the length of the line segment.
(d) The measurement requires a non-standard unit.

3. Two classmates, Rohan and Priya, measure the length of the same study table using their handspans (balisht). Rohan measures the table to be 12 handspans, while Priya measures it as 14 handspans. What is the primary scientific reason for this difference in their results?

(a) The table changed its length between measurements.
(b) Handspans vary in size from person to person, making them non-standard units.
(c) One of the students did not align the table properly with the wall.
(d) Handspan is an SI unit that changes with time.

4. Padma reads a highway milestone indicating that the distance to Delhi is 1.5 kilometres. Express this distance in terms of the standard SI unit of length (metres).

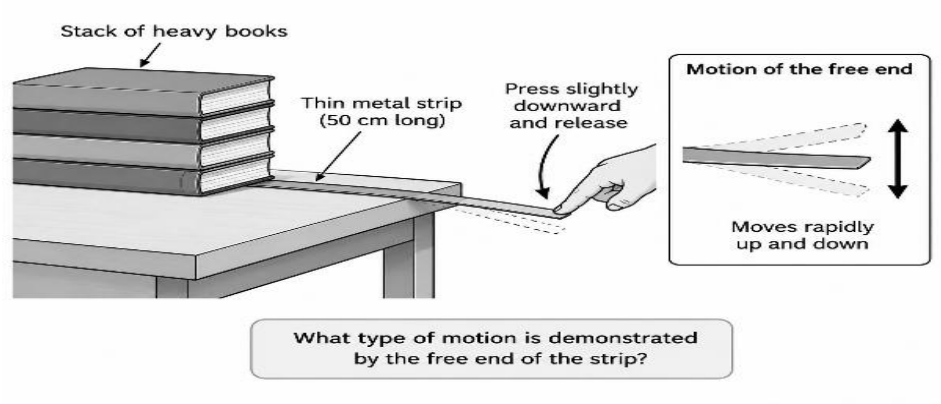
(a) 15 m.

(b) 150 m.

(c) 1500 m.

(d) 15000 m.

5. In a classroom activity, a thin metal strip 50 cm long is held pressed to a table under a stack of heavy books. When the free end of the strip is pressed slightly downward and released, it moves rapidly up and down. What type of motion is demonstrated by the free end of the strip?

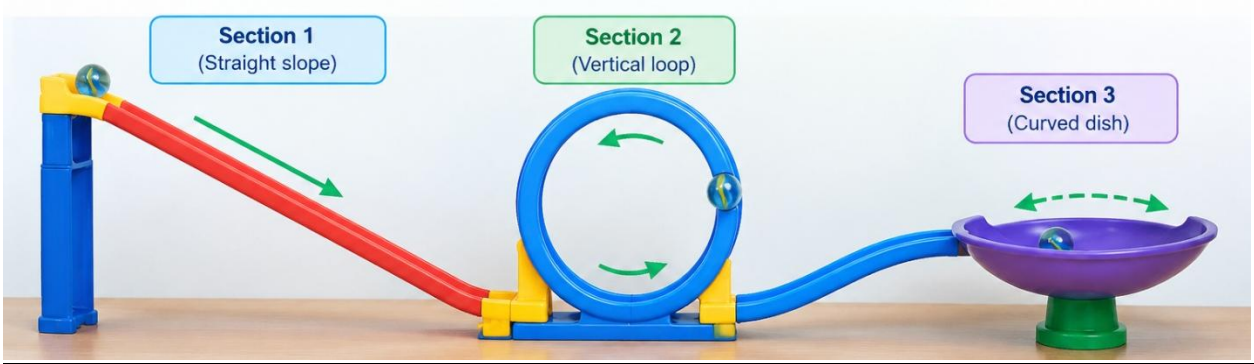


(a) Linear motion.
(b) Circular motion.
(c) Oscillatory motion.
(d) Rotational motion.

6. Tasneem decides to make her own measuring tape for a school project. She considers plywood, paper, cloth, stretchable rubber, and steel strip as candidate materials. Which material should she NEVER use for making a reliable measuring instrument?

(a) Steel, because it is metal.
(b) Stretchable rubber, because stretching changes the distance between markings, causing inaccurate measurements.
(c) Plywood, because it remains stiff.
(d) Wood, because it may break.

7. A marble rolls down a toy rollercoaster track. It first accelerates down a straight slope (Section 1), enters a vertical circular loop (Section 2), and finally swings to-and-fro in a curved dish at the end (Section 3). Which sequence correctly identifies the types of motion in Sections 1, 2, and 3?



(a) Circular motion > Linear motion > Oscillatory motion.

(b) Linear motion > Oscillatory motion > Circular motion.

(c) Oscillatory motion > Linear motion > Circular motion.

(d) Linear motion > Circular motion > Oscillatory motion.

For the following questions, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (A), (B), (C), and (D) as given below

(A) Both A and R are true, and R is the correct explanation of the assertion.

(B) Both A and R are true, but R is not the correct explanation of the assertion.

(C) A is true, but R is false.

(D) A is false, but R is true

8. **Assertion (A):** A passenger seated in a moving bus can be considered to be at rest and in motion at the same time.
Reason (R): Motion and rest are relative concepts that depend entirely on the chosen reference point.

9. **Assertion (A):** The International System of Units (SI units) was adopted globally to ensure uniformity in measurements.
Reason (R): The standard SI unit of length is the kilometre.

10. **Assertion (A):** The length of the space between two points is called distance.

Reason (R): The distance between two places is usually expressed in cm.

II. VERY SHORT ANSWER TYPE QUESTIONS (2M):

1. Differentiate between motion and rest using an example**. (WBQ SAQ)**

[Hint: <u>Rest-</u> An object that does not change its position with time, relative to its surroundings, is said to be at rest. A tree standing on the ground, or passengers sitting in their seats on a stationary bus

<u>Motion-</u> An object that changes its position with time, relative to its surroundings, is said to be in motion. A cow grazing across a field, an orange falling straight down from a tree, or a rolling marble.]

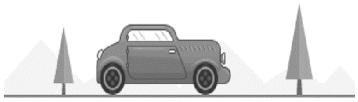
2. Why are flexible measuring tapes preferred for measuring curved surfaces? **(WBQ SAQ)**

[Hint: Flexible measuring tapes are preferred for measuring curved surfaces primarily because straight, rigid rulers cannot bend to follow curved lines or contours.]

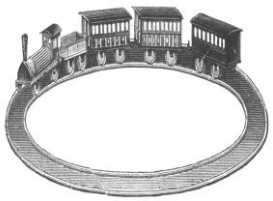
3. Why should a rigid scale be used instead of a flexible one for measurement?

[Hint: A rigid scale does not bend or stretch, so it gives accurate measurements.]

4. Observe the pictures given below and write down the type of motion exhibited by each.



A



B



C

[Hint: A – Linear motion, B – Circular motion, C – Oscillatory motion]

5. Why is the SI unit system important for measurements? **(WBQ SAQ)**

[Hint: The International System of Units (SI units) is essential for making accurate, reliable measurements, is universally accepted, and interconversion is simple and even small measurements are possible.]

6. What do you mean by reference point?

[Hint: When distance is stated with respect to a fixed object or point, then this point is called a reference point.]

III. SHORT ANSWER TYPE QUESTIONS: (3M)

1. Sania wants to measure the circumference of a tree. She is given a woollen thread and a cotton thread. Which one should she use and why?

[Hint: Sania should use the cotton thread.

Reason:

- **Cotton thread does not stretch easily, so it will give an accurate measurement of the tree's circumference.**
- **Wool thread is stretchable, so using it may give a longer or incorrect measurement.]**

2. Rahul wants to measure his new study table, but he found that a zero mark is missing on his scale. In such a case, how will he measure his table?

[Hint: (a) Avoid taking measurements from the zero mark. (b) Use any other full mark on the scale. (c) Subtract the reading of this mark from the reading at the other end.]

3. Define Oscillatory motion with the help of an activity.

[Hint: Definition: When an object moves to and fro about some fixed position, its motion is called oscillatory motion. Activity: Tie a marble ball to one end of a thread. Hang the marble ball by holding the other end of the thread. Keep your hand steady. Using the other hand, take the marble ball slightly to one side and then release to observe the oscillatory motion.]

4. Convert the following :

a) 45 km = _____m b) 77 m = _____ cm c) 189 cm = _____ mm

[Hint: a) 1 km = 1000 m, Thus 45 km = 45 x 1000 = 45000 m.

b) 1m = 100 cm, Thus 77 m = 77 x 100 cm = 7700 cm.

c) 1 cm = 10 mm, Thus 189 cm = 189 x 10 mm = 1890 mm.]

5. The distance between Dadar station and Mumbai Central station is 8.4 km. Express this distance in i) metres ii) centimetres

[Hint: 1 km = 1000 m, Thus 8.4 km = 8.4 x 1000 = 8400 m.

1m = 100 cm, Thus, 8400 m = 8400 x 100 cm = 840000 cm.]

6. While travelling in a train, it appears that the trees near the track are moving, whereas co-passengers appear to be stationary. Explain the reason.

[Hint: When we see the trees from a moving train, their position is changing with respect to us. Hence, they appear to be moving. On the other hand, the position of co-passengers is not changing with respect to us; hence they appear to be stationary. Motion and rest are sometimes related.]

IV. LONG ANSWER TYPE QUESTIONS. (5M)

1. Explain the thread method to measure the length of a curved line.



[Hint: Take a thread and mark one end. Place the marked end at the beginning of the curved line. Carefully place the thread along the entire curve, pressing it gently with your thumb. Mark the thread at the endpoint of the curve. Straighten the thread and measure the distance between the two marks using a ruler. The measured length of the thread gives the length of the curved line.]

V. SOURCE-BASED/ CASE STUDY-BASED QUESTIONS

Whether an object is at rest or in motion depends on the reference point. An object is in motion if its position changes relative to a reference point over time. If its position does not change, it is at rest. For example, a passenger sitting on a moving bus is at rest relative to the bus but in motion relative to a building outside.

There are three main types of motion:

- Linear Motion: Movement along a straight line, e.g., an orange falling from a tree.
- Circular Motion: Movement along a circular path, e.g., a child riding a merry-go-round.
- Oscillatory Motion: To-and-fro movement about a fixed position, e.g., a playground swing.

Periodic Motion is motion that repeats itself at regular intervals of time. Circular and oscillatory motions can be periodic.

(i) What is periodic motion? Give one example.
[Hint: Periodic motion is motion that repeats itself at regular intervals of time. A playground swing is an example of periodic motion.]

(ii) Is a passenger sitting on a moving bus at rest or in motion?
[Hint: The passenger is at rest relative to the bus but in motion relative to a building outside.]

(iii) Name any two types of motion and give one example of each.
[Hint: Linear motion – An orange falling from a tree. Circular motion – A child riding a merry-go-round.]

ANSWERS FOR OBJECTIVE TYPE QUESTIONS [1 to 10]:

1. (c) 9.6 cm
2. (b) The measurement will be inaccurate if the eye is positioned towards the Y and Z marked point.
3. (b) Handspans vary in size from person to person, making them non-standard units.
4. (c) 1500 m.
5. (c) Oscillatory motion.
6. (b) Stretchable rubber, because stretching changes the distance between markings, causing inaccurate measurements.
7. (d) Linear motion > Circular motion > Oscillatory motion.
8. (A) Both A and R are true, and R is the correct explanation of the assertion.
9. (C) A is true, but R is false.
10. (C) A is true, but R is false.

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