# **Parallel lines and transversal**

#### A. Choose the correct answer:

- 1. When a transversal intersects two parallel lines, alternate interior angles are
  - a) equal b) supplementary
  - c) complementary d) unequal
- 2. If two parallel lines are cut by a transversal, then corresponding angles are
  - a) 90° b) equal
  - c) supplementary d) different
- 3. The number of angles formed when two parallel lines are intersected by a transversal is
  - a) 4 b) 6 c) 8 d) 2
- 4. In the figure, if one of the corresponding angles is 75°, its matching angle is
  - a) 75° b) 90°
  - c) 105° d) 120°
- 5. Which pair of angles are on opposite sides of the transversal but inside the parallel lines?
  - a) corresponding angles b) alternate interior angles
  - c) alternate exterior angles d) vertically opposite angles

### **B. Write the Missing Terms to Complete the Sentences:**

- 1. A transversal intersects two or more \_\_\_\_\_\_ lines.
- 2. When two parallel lines are cut by a transversal, the alternate interior angles are \_\_\_\_\_.
- 3. The angles lying on the same side of the transversal and in matching positions are called \_\_\_\_\_\_ angles.
- 4. The sum of consecutive interior angles on the same side of a transversal is

5. Vertically opposite angles are always \_\_\_\_\_\_.

\_\_\_\_\_•

# C. Mark each sentence with a True ( $\checkmark$ ) or False (X):

1. Corresponding angles are equal when the lines are parallel.	
2. Alternate interior angles are always supplementary.	
3. Transversal can cut more than two lines.	
4. If two lines are not parallel, alternate angles formed are still equal.	
5. The sum of angles on a straight line is 180°.	

## **D.** Figure out the answers to these questions:

- 1. In the given figure, lines I and m are parallel and a transversal t cuts them. If one corresponding angle is 110°, find all other angles.
- 2. Identify all pairs of alternate interior angles and corresponding angles in a figure with two parallel lines and a transversal.
- 3. Draw two parallel lines and a transversal and label one pair each of corresponding, alternate interior, and vertically opposite angles.
- 4. If one angle formed by a transversal is 65°, find its corresponding angle and the adjacent angle on the same line.
- 5. Two lines are cut by a transversal and alternate interior angles are not equal. Are the lines parallel? Justify your answer.

# E. Challenge yourself with these questions:

- 1. Two parallel lines are cut by a transversal and one angle measures 120°. Find all eight angles formed.
- 2. A pair of interior angles on the same side of a transversal are in the ratio 2:3. Find the angles.
- 3. Draw a figure showing two parallel lines and a transversal. Mark and name all types of angle pairs.
- 4. Identify which angle pairs will be equal if the transversal intersects non-parallel lines.
- 5. Using a diagram, explain how to identify corresponding and alternate interior angles in a real-world example like a railway track.

F. Find the values of angles x, y and z in each of the following:-



