Important Questions for Class 7 Maths Chapter 5: These important questions for Class 7 Maths Chapter 5 Lines and Angles are beneficial for students as they provide a focused review of the essential concepts covered in the chapter.

By practicing these questions, students can deepen their understanding of lines, angles, and their properties. The questions help them develop critical thinking and problem-solving skills, enabling them to tackle complex problems with confidence. Regular practice with these questions also helps in better retention of the concepts and prepares students effectively for exams.

Important Questions for Class 7 Maths Chapter 5 Lines and Angles

In Class 7 Maths, the topic of Lines and Angles explores the fundamental properties and relationships between different types of lines and angles. A line is a straight, continuous arrangement of points that extends infinitely in both directions. Lines can be classified as horizontal, vertical, or oblique based on their orientation.

An angle is formed when two rays or lines meet at a common point called the vertex. Angles are measured in degrees and can be acute (less than 90 degrees), right (exactly 90 degrees), obtuse (between 90 and 180 degrees), or straight (exactly 180 degrees).

This chapter introduces various types of angles, such as complementary, supplementary, adjacent, and vertical angles, and explains how these relationships apply to geometric figures and real-life scenarios. Understanding lines and angles is crucial for solving problems involving shapes, constructing figures, and applying geometric principles.

Important Questions for Class 7 Maths Chapter 5 PDF

The Important Questions for Class 7 Maths Chapter 5 Lines and Angles PDF provides a valuable resource for students looking to reinforce their understanding of key concepts in this chapter. It includes a range of questions that cover fundamental topics such as types of lines, different types of angles, and their properties.

The questions are created to enhance students problem-solving skills and deepen their comprehension of geometric relationships. For easy access, a link to download the PDF is available below.

Important Questions for Class 7 Maths Chapter 5 PDF

Important Questions for Class 7 Maths Chapter 5 Lines and Angles

Here are some important questions from Class 7 Maths Chapter 5: Lines and Angles, along with their solutions:

Very Short Answer Questions (1 mark)

1. Define a right angle.

Solution: A right angle is an angle that measures exactly 90°.

2. What is an acute angle?

Solution: An acute angle is an angle that measures less than 90°.

3. What do you mean by complementary angles?

Solution: Complementary angles are two angles whose sum is 90°.

4. Name the types of angles based on their measurement.

Solution: The types of angles based on measurement are: Acute angle (less than 90°)Right angle (90°)Obtuse angle (greater than 90° but less than 180°)Straight angle (180°)Reflex angle (greater than 180° but less than 360°)Full angle (360°).

5. What is the sum of the angles on a straight line?

Solution: The sum of the angles on a straight line is 180°.

Short Answer Questions (2-3 marks):

1. If two angles are supplementary and one angle is 40°, find the other angle.

Solution: Supplementary angles add up to 180°. If one angle is 40°, the other angle is: 180°−40°=140°180° - 40° = 140°180°−40°=140° So, the other angle is 140°.

2. Define a transversal and explain its properties when it cuts two parallel lines.

Solution: A transversal is a line that intersects two or more lines at distinct points. When a transversal cuts two parallel lines:

Corresponding angles are equal.

Alternate interior angles are equal.

Alternate exterior angles are equal.

Consecutive interior angles are supplementary.

3. What is an obtuse angle? Give an example.

Solution: An obtuse angle is an angle greater than 90° but less than 180°. Example: 120° is an obtuse angle.

4. How do you find the sum of adjacent angles on a straight line?

Solution: The sum of adjacent angles on a straight line is always 180° because they form a straight angle.

5. Draw a pair of intersecting lines and identify the vertical angles.

Solution:

- When two lines intersect, they form two pairs of vertical angles.
- Vertical angles are always equal.

Long Answer Questions (4-5 marks):

1. Show that the sum of the angles of a triangle is 180° with the help of a diagram.

Solution: To prove the sum of angles in a triangle is 180°, draw a triangle ABCABCABC.

Draw a line parallel to side BCBCBC through vertex AAA.

This forms alternate interior angles between the parallel line and the sides of the triangle.

The angles at vertices AAA, BBB, and CCC are supplementary to the angles formed by the parallel line.

Hence, the sum of the interior angles of the triangle is 180°.

2. Explain the different types of angles with examples and draw their respective diagrams.

Solution:

Acute Angle: Less than 90° (Example: 45°).

Right Angle: Exactly 90° (Example: a square corner).

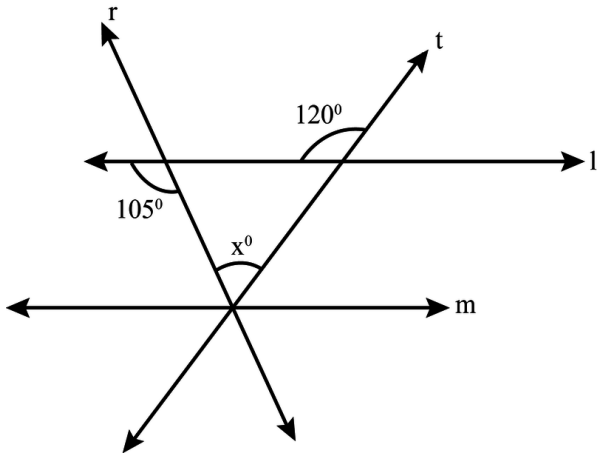
Obtuse Angle: Greater than 90° but less than 180° (Example: 120°).

Straight Angle: Exactly 180° (Example: a straight line).

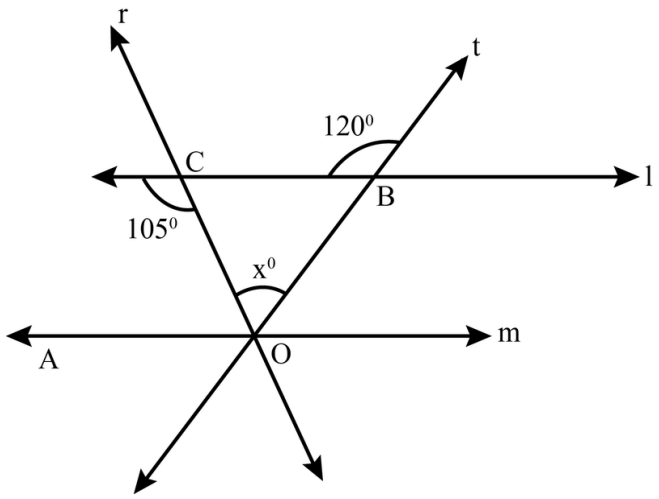
Reflex Angle: Greater than 180° but less than 360° (Example: 250°).

Full Angle: Exactly 360° (Example: a full rotation).

3. In the figure shown, lines l and m are parallel and lines r and t are transversals. Find the measure of x.



Solution:



∠AOC+105◦=180◦ [Co-interior angles]

Hence, ∠AOC=180◦−105◦=75◦

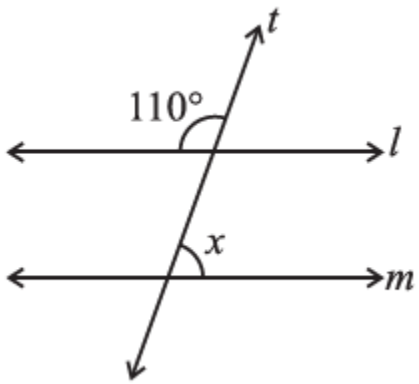
∠AOB=120◦ [Corresponding angles]

∠AOB=∠AOC+∠BOC

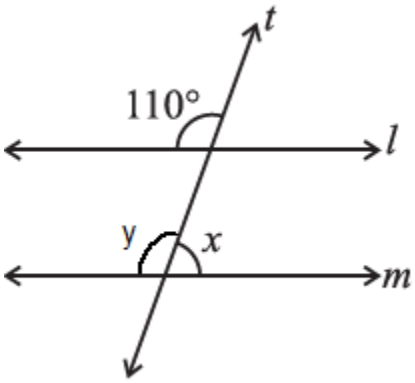
⇒120◦=75◦+x

⇒x=120◦−75◦=45◦

4. Find the value of x in each of the following figures if l ∥ m.



Solution: Compute the required value:



From the property of corresponding angles, ∠y=110°.

We know that Linear pair is the sum of adjacent angles is 180°.

⇒∠x+∠y=180°⇒∠x+110°=180°⇒∠x=180°-110°⇒∠x=70°

Hence, the value of x **is** 70°.

Benefits of Solving Important Questions for Class 7 Maths Chapter 5

Reinforces Understanding: Solving Important Questions for Class 7 Maths Chapter 5 Lines and Angles, helps reinforce the foundational concepts of geometry, such as different types of lines (parallel, perpendicular, intersecting), and various types of angles (acute, obtuse, right, straight). By practicing these questions, students gain a deeper understanding of how these concepts interact and are used in various mathematical contexts.

Enhances Problem-Solving Skills: The questions are created to challenge students understanding and application of geometric principles. They require the use of deductive reasoning to find unknown angles, prove relationships between angles, and solve problems involving lines and angles. Regular practice helps students develop critical thinking skills and the ability to approach problems logically and methodically.

Familiarizes with Exam Patterns: The questions included in the PDF are aligned with the exam patterns and syllabus requirements. By solving these questions students become familiar with the types of questions that are likely to appear in their exams. This familiarity reduces anxiety and helps them manage time effectively during exams, improving their overall performance.

Boosts Confidence: Consistent practice with these important questions builds confidence in students. As they work through the questions, they become more comfortable with the material and feel more prepared to tackle new and challenging problems. This confidence is crucial for achieving higher scores and mastering the subject.