129. Constructing Geometric Shapes and Bisectors

Practice Questions

1. What tool is used to construct a perpendicular bisector of a line segment?
2. How do you construct an angle bisector of a given angle?
3. What is the first step in constructing a 60° angle using a compass?
4. How can you construct a 90° angle using a compass and a ruler?
5. Describe the steps to construct an equilateral triangle using only a compass and ruler.
6. How do you construct a perpendicular line from a point to a given line?
7. What is the process for constructing a parallel line to a given line using a compass?
8. How do you construct a triangle given three side lengths (SSS construction)?
9. Describe how to construct a rhombus given one side length and one angle.
10. How can you check if a bisector is accurate after construction?

Scenario Questions

1. A carpenter needs to find the midpoint of a wooden plank before cutting. What construction technique should they use?
2. A builder needs to ensure a door frame is exactly vertical to the floor. What geometric construction helps?
3. A designer needs to split an angle in half to create a symmetric pattern. How can they do this accurately?
4. A mapmaker is drawing a road that is equidistant from two existing paths. What construction should they use?
5. An artist wants to draw a perfect hexagon starting from one side. What construction steps should they follow?
6. A student needs to draw a triangle with sides 5 cm, 6 cm, and 7 cm. What method should they use?
7. A gardener is designing a flower bed shaped like an equilateral triangle. What is the best way to construct it?
8. A surveyor needs to draw a perpendicular road from a main highway to a house. What geometric technique is useful?
9. An architect is designing a roof with two equal sloping sides. What construction method ensures equal angles?
10. A manufacturer is cutting circular tiles and needs to find the exact center of each tile. What should they do?

Extra Content for Foundation GCSE

129. Constructing Geometric Shapes and Bisectors

Practice Questions

1. Compass and ruler
2. Use a compass to draw arcs from the angle's vertex, then draw a line through the intersection points.
3. Draw a baseline and mark a point to serve as the vertex of the angle.
4. Construct a perpendicular bisector of a line segment.
5. Draw a baseline, use a compass to mark two points equidistant from the baseline, and connect them.
6. Use a compass to draw arcs from the point, then construct a perpendicular bisector.
7. Use a compass to copy the angle and draw a parallel line.
8. Use the SSS method: draw one side, then use a compass to mark the other two sides' lengths.
9. Use a compass to construct equal sides and the given angle.
10. Measure the divided segments or angles to ensure they are equal.

Answers

Scenario Questions

1. Construct a perpendicular bisector.
2. Construct a perpendicular line.
3. Construct an angle bisector.
4. Construct a perpendicular bisector.
5. Use a compass to construct a hexagon from one side.
6. Use the SSS construction method.
7. Construct an equilateral triangle using a compass and ruler.
8. Construct a perpendicular line.
9. Construct an angle bisector.
10. Find the perpendicular bisectors of two chords to locate the center.