

Start Tasks – Answers



1. Which tool is best for drawing a circle with a fixed radius: ruler or compass?

Solution Compass — it holds a fixed radius.

2. Which tool is best for joining two marked points with a straight segment?

Solution Ruler — it draws a straight line.

3. What is the locus of points exactly 3 cm from point P ?



Solution A circle, centre P , radius 3 cm.

4. What is the locus of points that are the same distance from points A and B ?

Solution The perpendicular bisector of AB .

5. What is the locus of points that are the same distance from the two arms of an angle?

Solution The bisector of the angle.

6. You draw a circle with centre O and radius 4 cm. How far is every point on the circle from O ?

Solution 4 cm — every point is one radius from the centre.

7. If point C lies on the perpendicular bisector of AB , what can you say about CA and CB ?

Solution $CA = CB$ — the point is equidistant from A and B .

8. What is the locus of points exactly 2 cm from line l ?



Solution Two parallel lines, one 2 cm on each side of l .

9. What does the word *equidistant* mean?

Solution The same distance from each.

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10. A park must be equal distance from two crossing roads. Which construction line shows all possible places?

Solution The angle bisector of the roads.

11. If a point lies on a circle with centre P and radius 6 cm, what is its distance from P ?

Solution 6 cm.

12. The midpoint of segment AB always lies on which special line of AB ?

Solution The perpendicular bisector of AB .

13. When constructing the perpendicular bisector of AB , why use the same compass width from both points?

Solution So the arc crossings are equally far from A and B .

14. Which locus can have two separate branches: points 2 cm from a line, or points 2 cm from a point?

Solution Points 2 cm from a line — one branch each side.

15. What region is described by points less than 3 cm from point P ?

Solution Inside the circle of radius 3 cm about P (boundary excluded).

16. How many compass arcs are usually drawn first when making a perpendicular bisector of AB ?

Solution Two — one from each end.

17. A point lies on the bisector of an 80° angle. What two equal angles are formed?

Solution 40° and 40° ($80^\circ \div 2$).

18. Which circle is farther from the centre: radius 3 cm or radius 5 cm?

Solution The radius 5 cm circle.

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19. If you only want the points 4 cm from Q on one side of Q, would you draw a full circle or just an arc?

Solution Just an arc — a full circle covers both sides.

20. Which construction finds points equally far from A and B?



Solution The perpendicular bisector of AB.

21. Which construction finds points equally far from two intersecting lines?



Solution The angle bisector.

22. A school must be within 2 km of the town hall. Should you shade inside or outside the circle locus?

Solution Inside (and on) the circle of radius 2 km.

23. Why must the compass width stay fixed while one circle is being drawn?

Solution To keep the radius constant so the curve is a true circle.

24. If two equal circles centred at A and B cross, how many intersection points do they usually have?

Solution Two.

25. Which locus is closed: a circle or a perpendicular bisector?

Solution The circle — it closes on itself; the bisector runs on forever.

26. Can the midpoint of AB be found where the perpendicular bisector crosses AB?

Solution Yes — the bisector meets AB at its midpoint.

27. A point on AB's perpendicular bisector: closer to A, closer to B, or equidistant?

Solution Equidistant from A and B.