# SCORE

# Geometry
## with Classified
### answer book

**8**

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# 21- Construction

1. These instructions for inscribing an octagon in a circle are in the wrong order.

   Write the correct order.

| A | Draw a diameter of the circle. |
|---|---|
| B | Join the eight points where lines meet the circumference. |
| C | Draw a circle. |
| D | Bisect two adjacent 90° angles at the centre of the circle, extending the bisec-tors to meet the circumference. |
| E | Construct a perpendicular bisector of the diameter, extending it to meet the circumference. |

2. Gulzhan has tried to do three constructions, shown below.

   She has made a mistake in each con-struction. In each part, describe the mistake she has made.
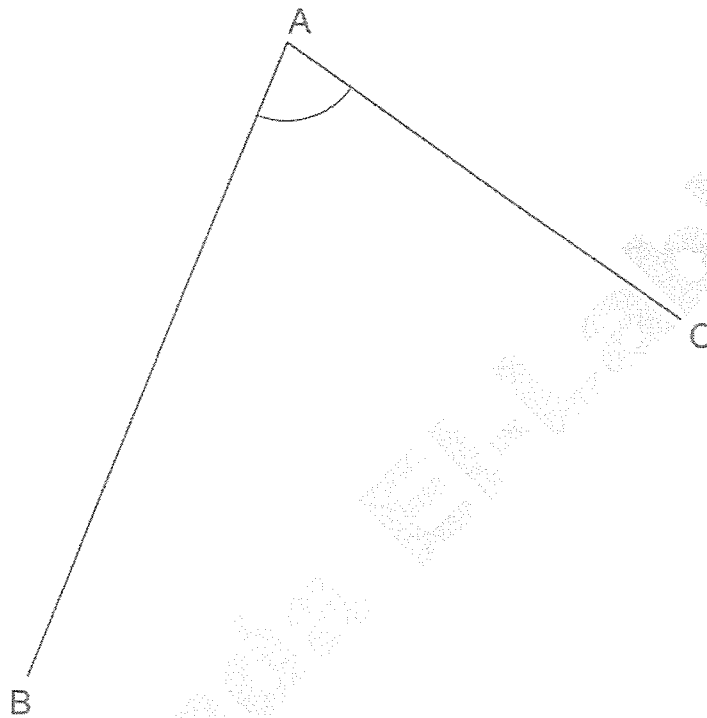
   a) Perpendicular from a point to a line:
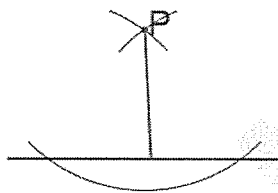
   b) Octagon inscribed in a circle:
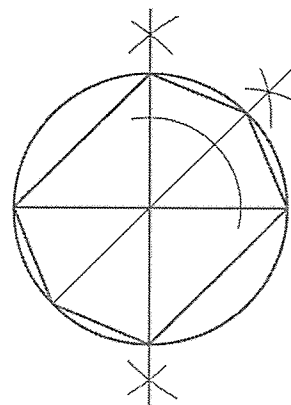
3. In the diagram, lines AB and AC are straight lines.
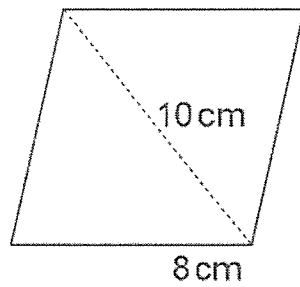
Using compasses and a straight edge, construct the angle bisector of angle BAC.
You must leave in your construction lines.

A

C

B

4. Draw An angle 30°.

5. The diagram shows a sketch of a rhombus, side length 8 cm.
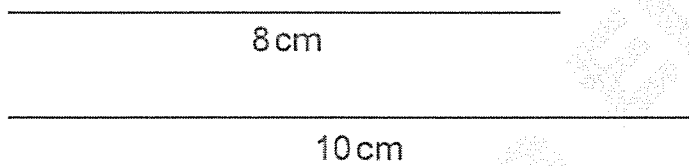The length of one diagonal is **10 cm**.



10 cm

Not drawn
accurately

8 cm

Use compasses and a straight edge to make an accurate drawing
of the rhombus.

You can use the 8 cm and 10 cm lines to set your compasses.

You must leave in your construction lines.

8 cm

10 cm

6. Draw a line segment AB= 5 cm long.

Add a line segment BC, 5cm long to your diagram so that ∠ABC = 110°

Now draw a line segment XY=5 cm long.

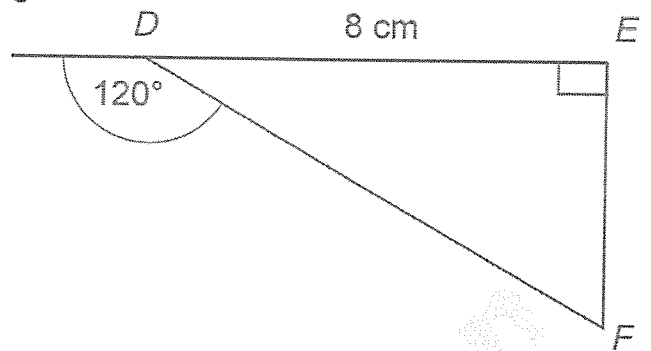Add a line segment XZ =5 cm long to your diagram so that ∠YXZ = 110°

7. a. Draw a circle with radius 4 cm.

   b. **Inscribe** a square in the circle.

   c. Measure each side of the square .

8. Construct an equilateral triangle with side length 5 cm.

9. a . Construct an accurate copy of triangle DEF.

b. Check that EF = 4.6 cm.



10. a. Draw a circle with radius 4 cm.

b.  Inscribe an equilateral triangle in the circle.

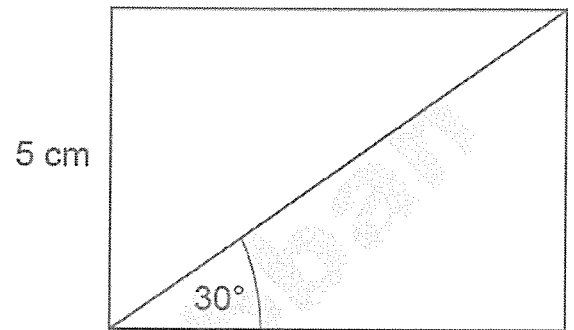c.  Check that the length of each side of the triangle is 7.8 cm.

11. a. Draw a circle with radius 3 cm.
    b. Inscribe a regular hexagon in the circle.
    c. Measure the sides and angles of the hexagon to check your accuracy.
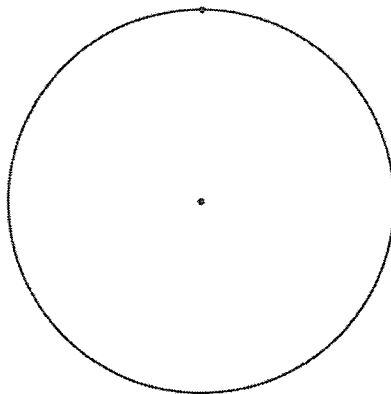
12. Here is a rectangle.
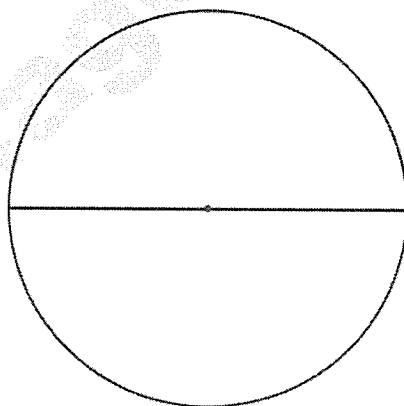
    a. Construct an accurate copy of the rectangle.

    b. Measure the diagonal.

12. a. Use a straight edge and compasses to inscribe an equilateral triangle inside this circle.

b. Use a straight edge and compasses to inscribe a regular octagon inside this circle.

13. In the space below, use ruler and compasses to construct an equilateral triangle ."" .

with sides of length 5cm

14. A hexagon has 6 sides. Draw a hexagon with 3 cm.

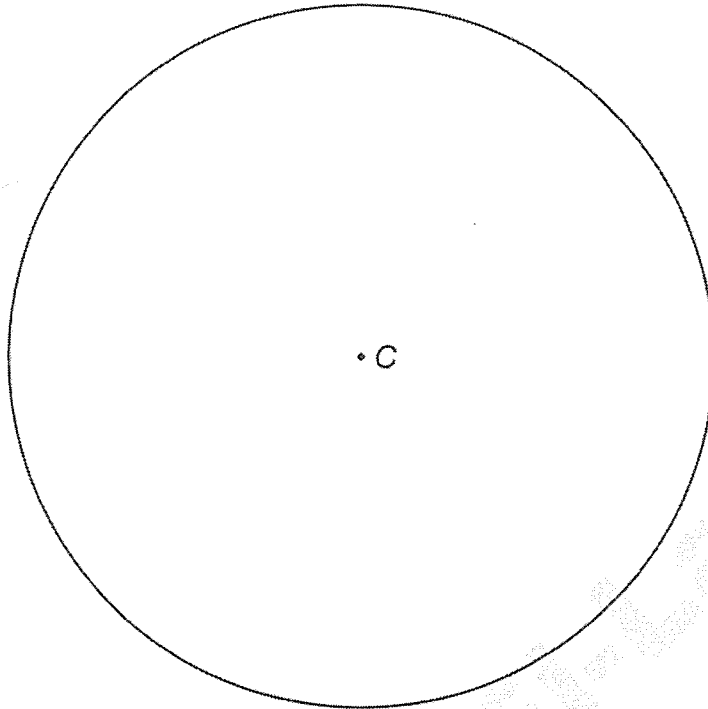15. A hexagon has 6 sides. Draw a hexagon with 4 cm.

16. Use a straight edge and compasses only to construct an equilateral triangle ABC.

The side AB has been drawn for you.

Do not rub out your construction arcs.

A
|
|
|
|
B

17. Here is a circle with centre C.



Construct an inscribed regular hexagon.

Use only a pair of compasses and a ruler.

Do not rub out your construction lines.