

SAMPLE PAPER 6: PAPER 1

QUESTION 9 (25 MARKS)

Question 9 (a)

Draw radii from O to each of the other points on the circle. Each of the angles at the centre of the circle is 60° .

$$|\angle AOB| = 60^\circ$$

Triangle AOB is an isosceles triangle as $|OA| = |OB| = r$.

$$\therefore |\angle BAO| = |\angle ABO| = x^\circ$$

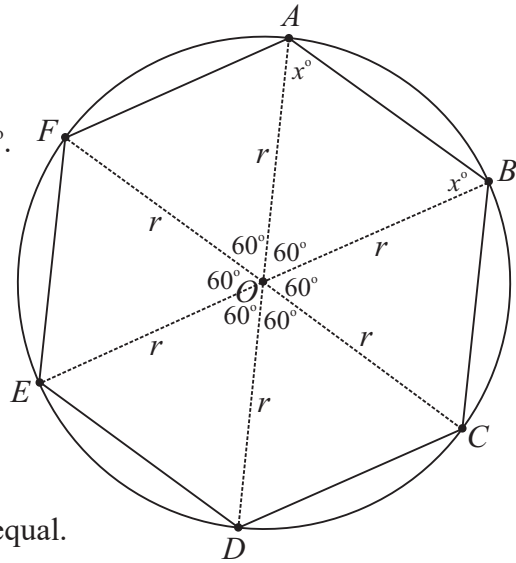
$$60^\circ + x^\circ + x^\circ = 180^\circ \text{ [Three angles add up to } 180^\circ \text{]}$$

$$2x^\circ = 120^\circ$$

$$\therefore x = 60^\circ$$

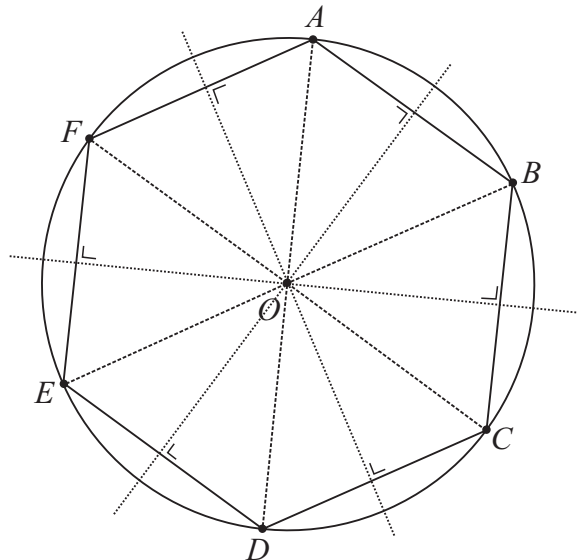
Triangle AOB is an equilateral triangle as all angles are equal.

$$\therefore |AB| = r$$

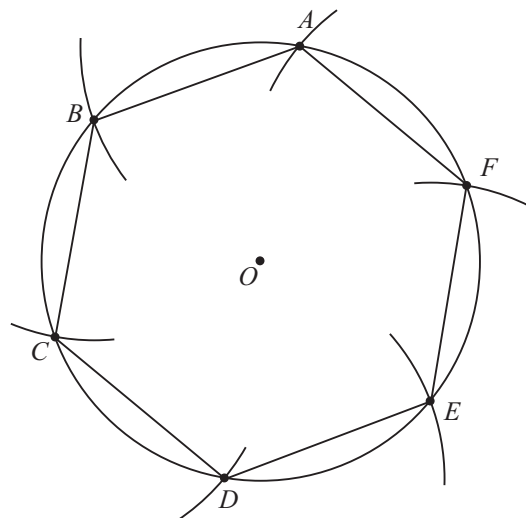
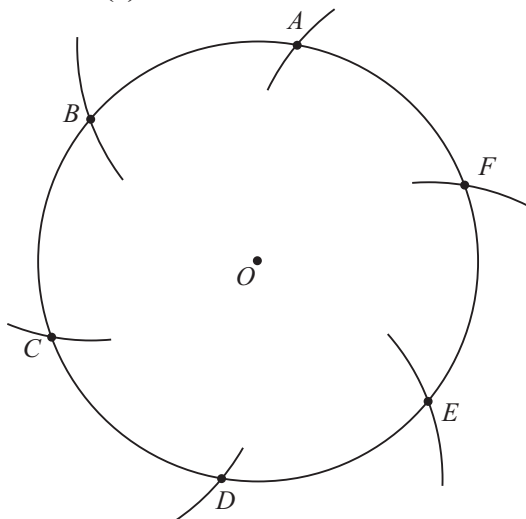


Question 9 (b)

Axes of symmetry: AD , BE , CF and the three perpendicular bisectors of the sides



Question 9 (c)



Mark a point called A anywhere on the circle.

Set the radius of the compass to the distance $|OA|$.

With the compass placed at A , draw arc AB . Then with the compass placed at B (do not change radius of compass), draw arc BC . Continue around the circle until you arrive back at A .

Join the points in straight lines to form the hexagon $ABCDEF$.