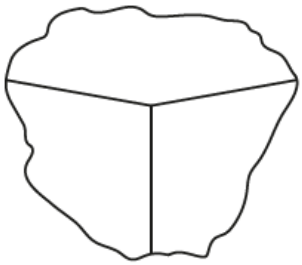
Basic Geometry – 2022 GCSE Mathematics Higher

1. June/2022/Paper_J560/04/No.4

Three **regular** polygons meet at a point.



Not to scale

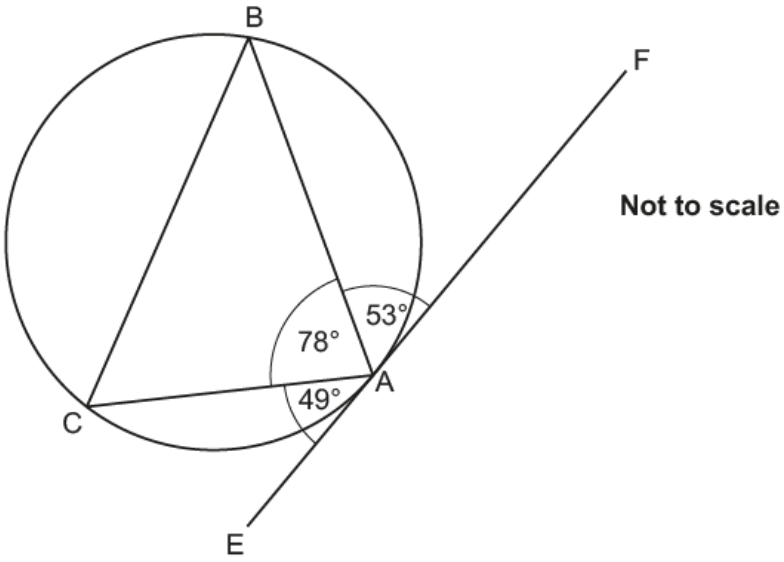
Two of the polygons are pentagons.

Find the number of sides of the third polygon.
You must show your working.

..... **[6]**

2. June/2022/Paper_J560/04/No.12

(a) Points A, B and C lie on the circumference of a circle.
EAF is a tangent to the circle.



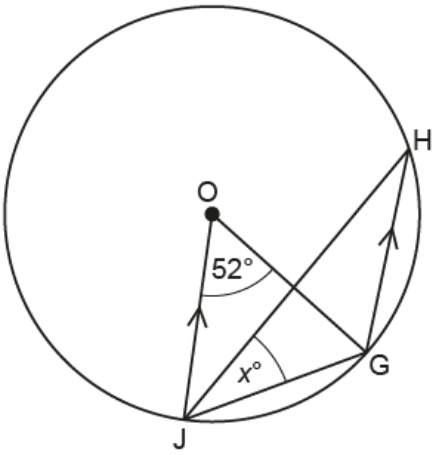
Write down the value of angle BCA giving a reason for your answer.

Angle BCA = ……° because .....

.....

..... **[2]**

(b) Points G, H and J lie on the circumference of a circle, centre O.



Not to scale

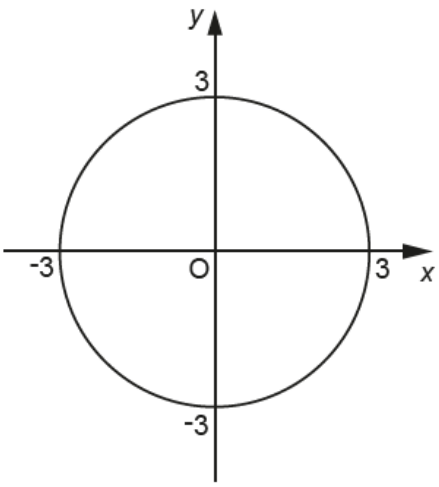
Angle GOJ = 52° and angle GJH = x°.
Lines JO and GH are parallel.

Find the value of x.
You must show your working.

(b) x = ... **[5]**

3. June/2022/Paper_J560/04/No.18

The diagram shows a circle, centre the origin.



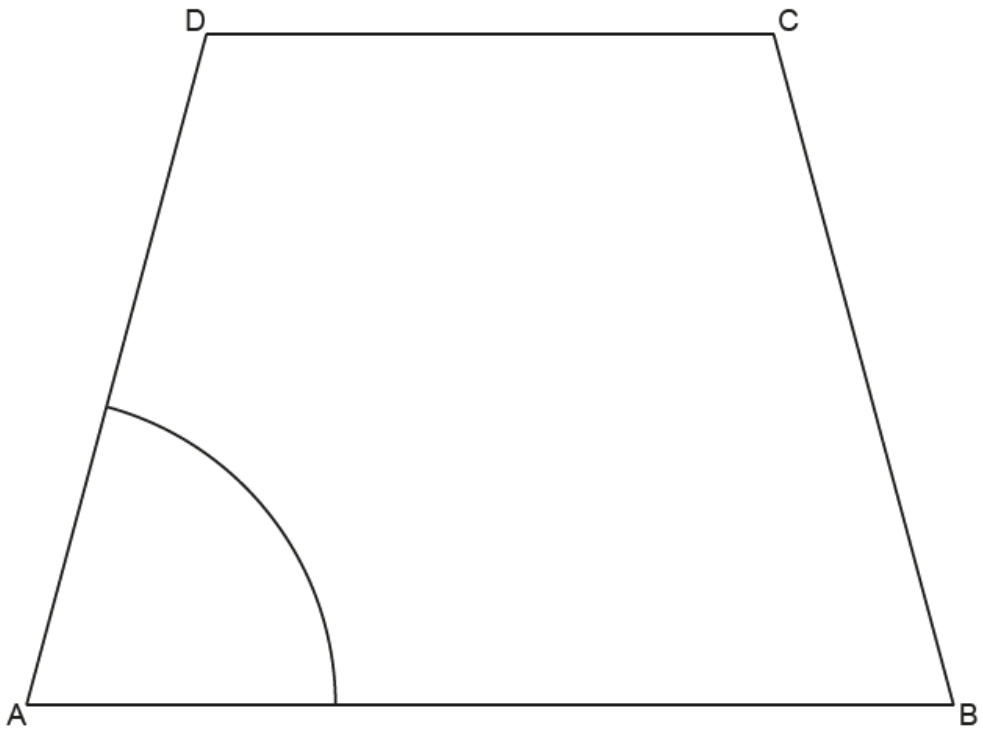
Write down the equation of the circle.

..... **[2]**

4. June/2022/Paper_J560/05/No.9

The diagram shows the scale drawing of a sandpit, ABCD.
It also shows the arc of all points in the sandpit that are 80 cm from corner A.

Scale: 1 cm represents 20 cm



A game is played by throwing a ball into the sandpit.
Points may be scored when the ball lands in the sandpit.

- 1 point if the ball lands within 80 cm of corner A,
  and
- 1 point if the ball is closer to side AB than side AD,
  and
- 1 point if the ball is closer to corner A than corner B.

By completing the construction, find and shade the regions where 2 points can be scored.
Show all your construction lines. **[6]**