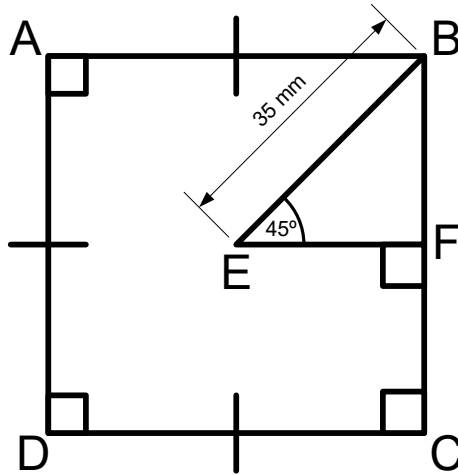


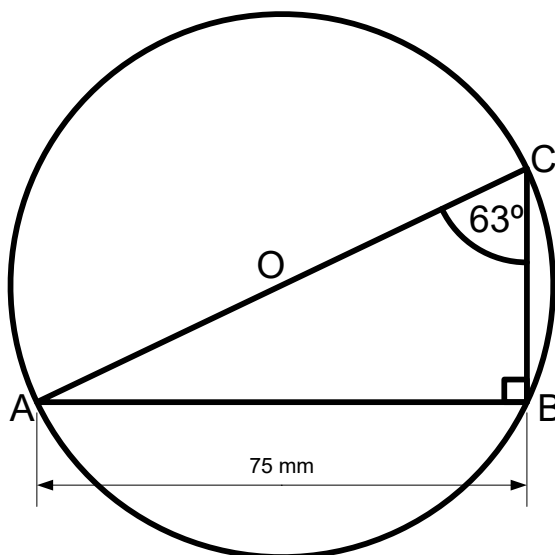
## Trigonometry and Pythagoras Theorem

- 1 ABCD is a quadrilateral.  
The vertex at E is the centre point of the quadrilateral.  
F is the midpoint of BC.



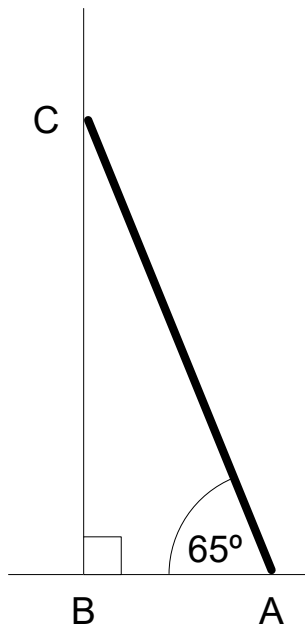
Calculate the area of the quadrilateral.

- 2 ABC is a triangle that is circumscribed by the circle shown.  
O is the centre point of the circle.  
AOC is the diameter of the circle.



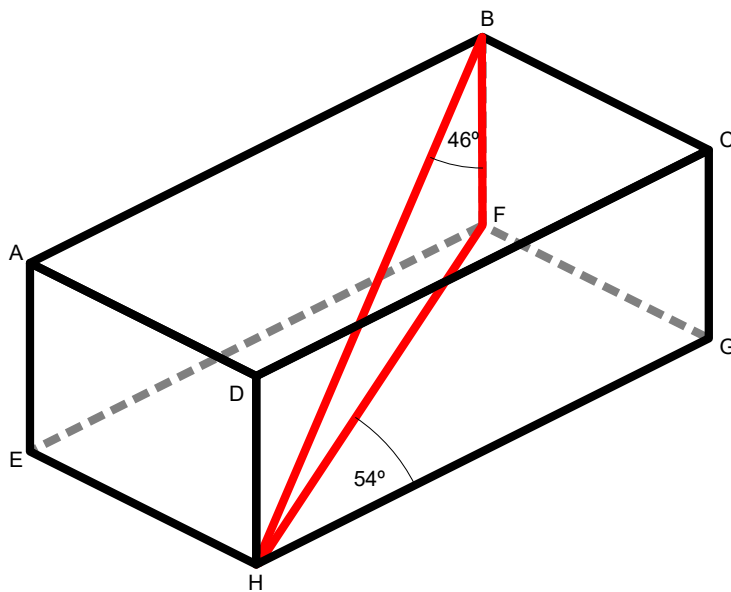
Calculate the area of the circle outside the triangle.

- 3 Faith needs to rescue her cat. The cat has climbed a wall and wont jump down. Faith's ladder is 6m long. Faith cannot put her ladder at an angle that is steeper than  $65^\circ$  or it will be unsafe.



How high up the wall will the ladder reach?

- 4 FH is 14cm long.  
 Angle FHG is flat on the base of the cuboid and is  $54^\circ$ .  
 Angle HBF is the angle in the red triangle and is  $46^\circ$ .



What is the volume of the cuboid?