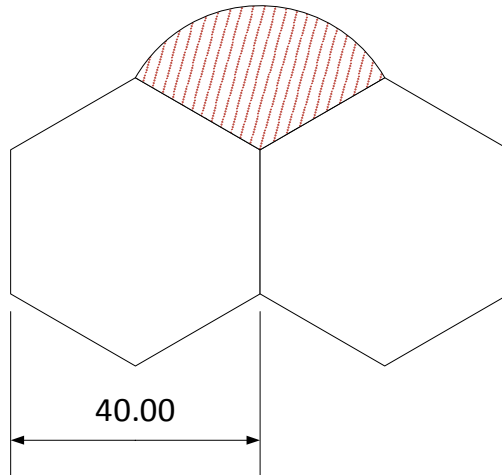**Parallel Lines, Pythagoras' Theorem and Trigonometry Revision Pack**
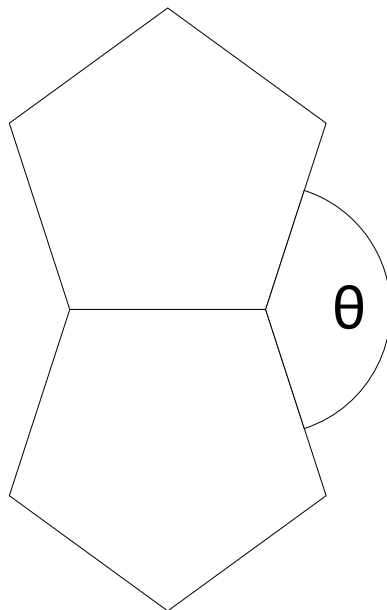
All diagrams are **not** drawn to scale.

1. Examine the diagram below. It shows two regular hexagons that are touching along one of their sides.
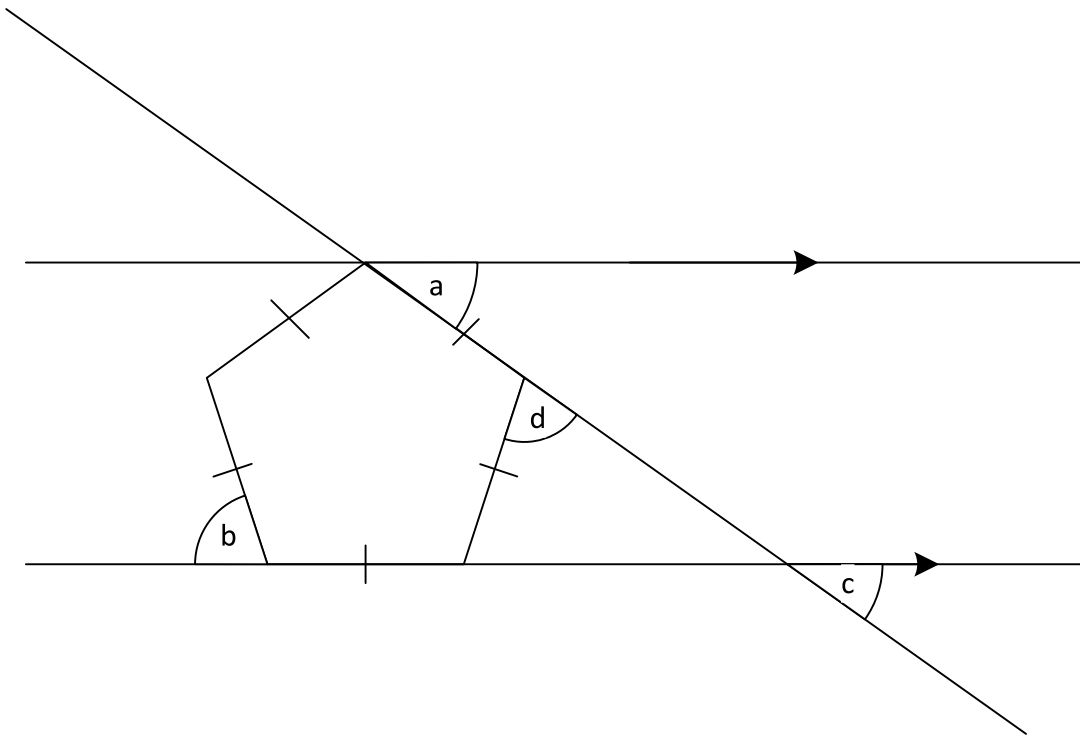
40.00

What is the area of the shaded sector above the two hexagons?

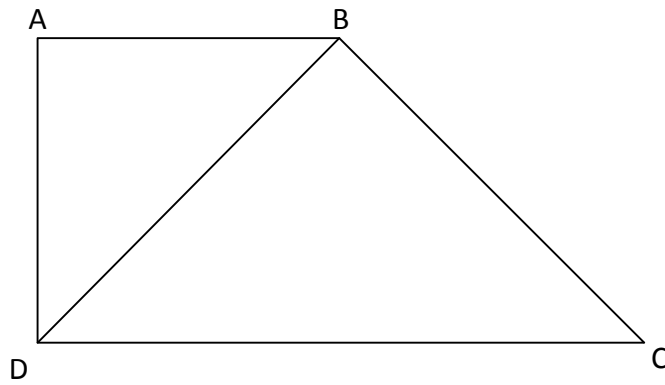2. What is the size of angle θ?

θ

Make sure you explain how you know using mathematical terminology.

3. Find the size of these missing angles.



4. ABCD is a trapezium.



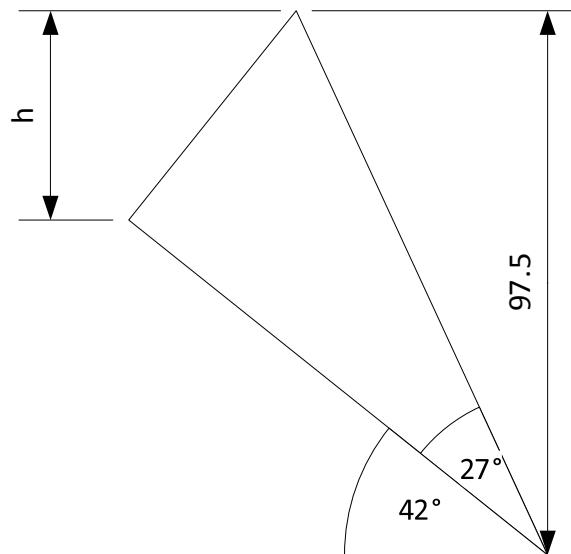Angle ADC = Angle BAD = 90°.

Angle ABC = 112° and angle BDC = 51°.

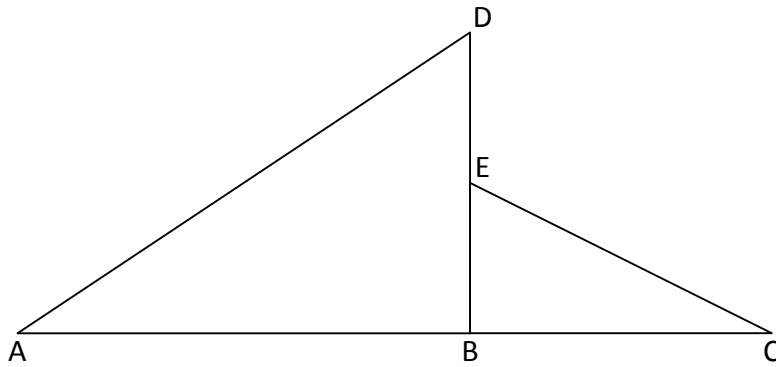Line DC is 24cm long.  BD is 11cm long.

What is the area of the trapezium?

5. Write the exact values in the following table:

| Angle (θ) | Sin(θ) | Cos (θ) | Tan (θ) |
|-----------|--------|---------|---------|
| 0° | | | |
| 30° | | | |
| 45° | | | |
| 60° | | | |
| 90° | | | |

6. Below is a right angled triangle placed on a tilt of 42°. Both length dimensions are vertical. Find the value of h.
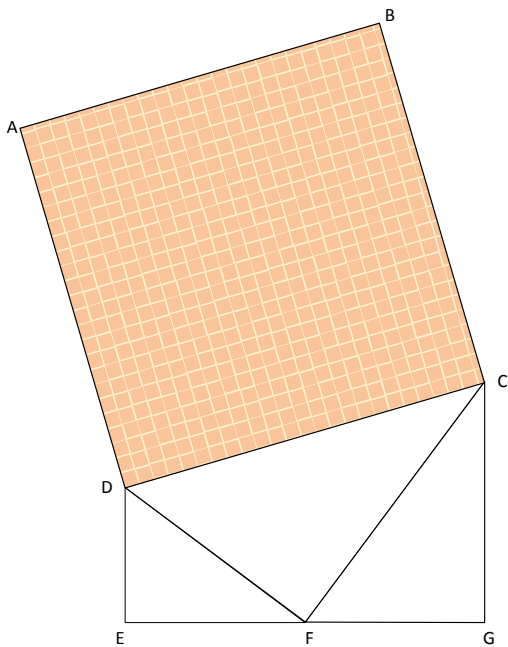
7. Find the area of the triangles below.



AB is 14 cm long.  DE is equal in length to BE.

Angle ADB is 41° and the length of CE is 8cm.

What is the area of each triangle?

8. What is the area of the square below given the following information?



EF = FG = 7.7cm

CG = 1.6 (DE) = 11cm