



Factorise

$$8x^2 + 14x - 15$$

$$(4x-3)(2x+5)$$

Find the nth term of the quadratic sequence with the first four terms

$$\begin{array}{ccccccc}
 10 & 33 & 64 & 103 & \dots & a=4 & \\
 23 & 31 & 39 & & & b=11 & \\
 8 & 8 & & & & c=-5 &
 \end{array}$$

$$4n^2 + 11n - 5$$

$$(x+2)(x^2 - ax - 4)$$

$2^3 - ax^2 - 4x + 2x^2 - 2ax - 8$ is expanded and simplified

The coefficient of x is 6 times the coefficient of x^2

Find a

$$\boxed{x^2} \quad -a + 2$$

$$\boxed{x} \quad -4 - 2a$$

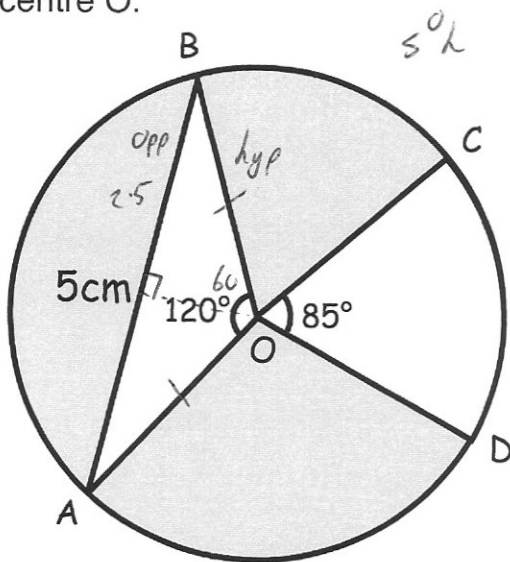
$$6(-a+2) = -4 - 2a$$

$$-6a + 12 = -4 - 2a$$

$$16 = 4a$$

$$\boxed{a=4}$$

A, B, C and D are points on a circle, centre O.



Chord AB = 5cm

Angle AOB = 120°

Angle COD = 85°

Find the area of the shaded region.

$$\frac{2.5}{\sin 60} = 2.8867... \text{ (radius)}$$

$$\begin{aligned}
 \Delta AOB &= \frac{1}{2} \times 2.8867...^2 \times \sin 120 \\
 &= 3.608439... \text{ cm}^2
 \end{aligned}$$

$$\text{Sector OBC} : \frac{85}{360} \times \pi \times 2.88...^2 = 6.18... \text{ cm}^2$$

$$\text{Circle} : \pi \times 2.886...^2 = 26.1799... \text{ cm}^2$$

$$26.1799... - 3.608... - 6.18... = \boxed{16.39 \text{ cm}^2}$$