

18th August

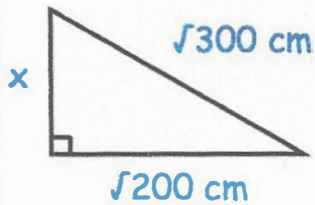


Find the nth term of the quadratic sequence with the first four terms

4 16 36
10 33 64 103
23 31 39
8 8

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

6, 17, 28



Find x

$$(\sqrt{300})^2 - (\sqrt{200})^2 = x^2$$

$$300 - 200 = x^2$$

$$x = 10 \text{ cm}$$

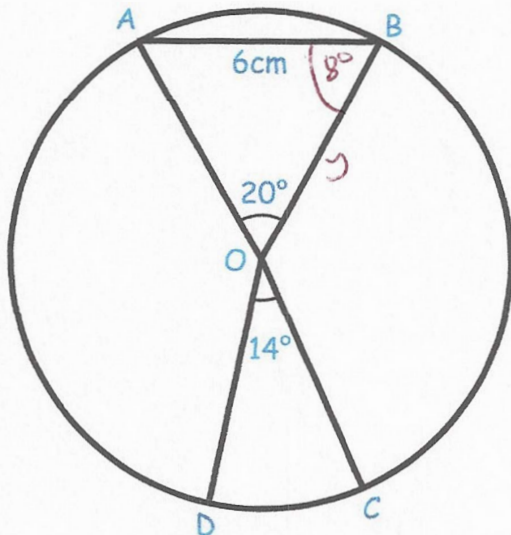
$$(x + 2)(x^2 - ax - 4)$$

is expanded and simplified

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

Find a

$$\begin{aligned} & x^3 - ax^2 - 4x + 2x^2 - 2ax - 8 \\ & (2-a)x^2 - 4 - 2a \\ & 12 - 6a = -4 - 2a \\ & 16 = 4a \quad a = 4 \end{aligned}$$



Which has the greatest area, triangle OAB or sector ODC?

$$\frac{y}{\sin 80} = \frac{6}{\sin 20} \quad y = 17.276$$

$$\frac{1}{2} \times 6 \times 17.276 \times \sin 80 = 51.04$$

$$\frac{14}{360} \times \pi \times 17.276^2 = 36.4$$

Triangle OAB