

21st November



Corbettmaths

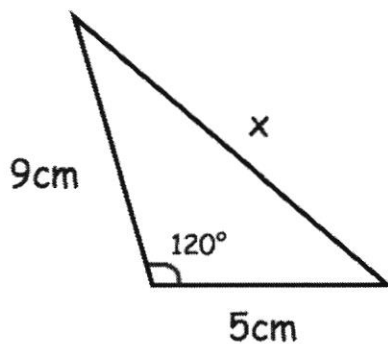
$$y = x^5 + 5x^2$$

Work out $\frac{d^2y}{dx^2}$

$$\frac{dy}{dx} = 5x^4 + 10x$$

$$\frac{d^2y}{dx^2} = 20x^3 + 10$$

Shown below is a triangle. (non-calc)



Find the exact length of the side labelled x.

$$\begin{aligned} x^2 &= 9^2 + 5^2 - 2 \times 9 \times 5 \times \cos 120^\circ \\ &= 81 + 25 + 45 \\ &= 151 \\ x &= \sqrt{151} \end{aligned}$$

A circle has centre C and equation

$$x^2 + y^2 - 8x + 10y - 3 = 0$$

$$x^2 - 8x + y^2 + 10y = 3$$

$$(x-4)^2 - 16 + (y+5)^2 - 25 = 3$$

$$(x-4)^2 + (y+5)^2 = 44$$

Find the centre of the circle

$$(4, -5)$$

Find the radius of the circle

$$\sqrt{44} = 2\sqrt{11}$$