

9th February

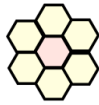
Corbettmaths

Solve

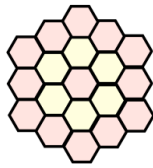
$$\frac{81^x}{9^{x+1}} = 3\sqrt{3}$$



Pattern 1



Pattern 2



Pattern 3

How many of these tiles are needed to make Pattern number 12?

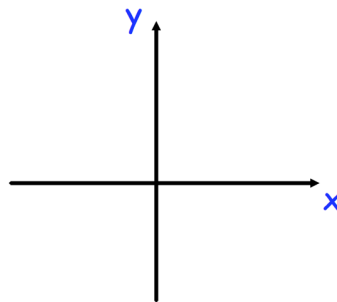
The coefficient of the x^2 in the expansion of $(3x + a)^4$ is 1350.

Work out the possible values of a

Sketch the curve

$$y = (x - 6)(x - 1)(x + 3)$$

Label the points where the curve crosses the axes.



Point A lies on the curve

$$y = x^2 + 2x + 10$$

The x-coordinate of A is -5

Find the equation of the normal to the curve at A.