**20th January** **Higher Plus 5-a-day**

Corbettmaths

The point (12, 5) lies on a circle with centre (0, 0)

$r = 13$

Write down the coordinates of another three points on the circle.

(12, -5)

(0, 13)

(-13, 0)

Expand and simplify

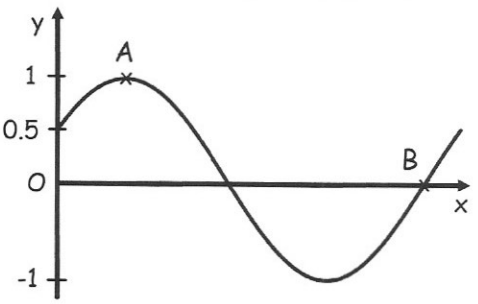
$(x-3)^3$

$(x-3)(x-3)(x-3)$

$(x^2-6x+9)(x-3)$

$x^3-3x^2-6x^2+18x+9x-27$

$x^3-9x^2+27x-27$




Shown is the curve

$y = sin(x + 30°)$ left

Write down the coordinates of A and B

A (60, 1)

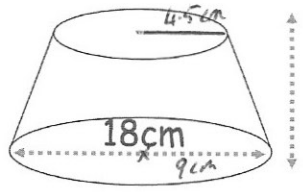
B (330, 0)

There are 20 sweets in a box.
There are y lemon sweets and the rest of the sweets are orange.

Florence takes out two sweets, at random, from the box.

Find an expression, in terms of y, for the probability that Florence takes two lemon sweets.

$\frac{y}{20} \times \frac{y-1}{19} = \frac{y(y-1)}{380}$




20cm

$l = 41$ whole cone

$l = 20.5$ small cone

Shown is a frustum of a cone that had a perpendicular height of 40cm

Calculate the surface area of the frustum

$(\pi \times 9 \times 41) - (\pi \times 4.5 \times 20.5)$

$= 869.435766...\ cm$

base: $\pi \times 9^2 = 254.469...$

top: $\pi \times 4.5^2 = 63.617...$

SA = 1187.522 $cm^2$