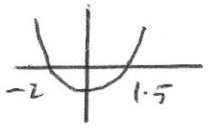
28th December **Higher Plus 5-a-day**

Corbettmaths

Solve

$2x^2 + x - 6 > 0$



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

$x=1.5 \quad x=2$

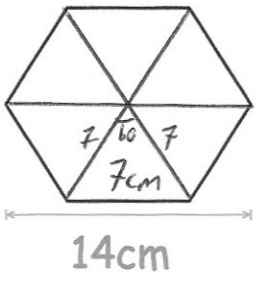
$x < -2$ or $x > 1.5$

Find the area of the regular hexagon.

$\frac{1}{2} \times 7 \times 7 \times \sin 60 = 21.21...$

$21.21... \times 6 =$

$127.306 cm^2$



$f(x) = \frac{x}{2} - 1$

$g(x) = 4x^2 + 5$

Find $gf(x)$

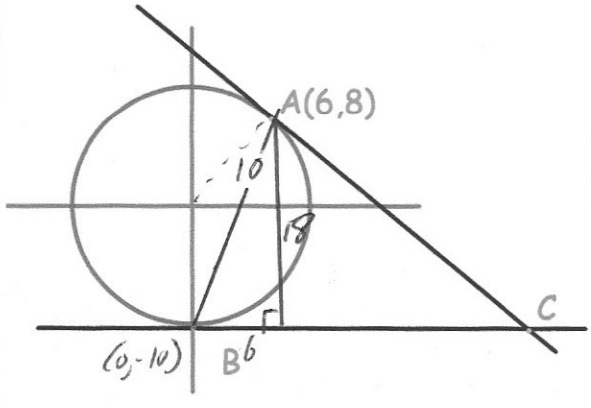
$x^2 - 4x + 9$

$4\left(\frac{x}{2} - 1\right)^2 + 5$

$= 4\left(\frac{x}{2} - 1\right)\left(\frac{x}{2} - 1\right) + 5$

$= 4\left(\frac{x^2}{4} - \frac{x}{2} - \frac{x}{2} + 1\right) + 5$

$= x^2 - 4x + 4 + 5$



Shown is a circle, centre O.
A and B are points on the circle.
AC and BC are tangents.

Explain why AC and BC have equal lengths.

The tangents to a circle from the same point will have equal length.

Calculate the distance AB

B (0, -10)

$AB^2 = 6^2 + 18^2$

$AB^2 = 360$

$AB = 18.97$