17th August **Higher Plus 5-a-day**

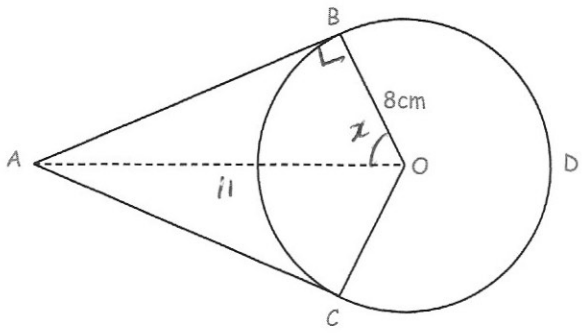
Corbettmaths

Expand and simplify

$(3+\sqrt{2})(1-\sqrt{2})$

$3 - 3\sqrt{2} + \sqrt{2} - 2$

$= 1 - 2\sqrt{2}$



B, C and D are points on a circle of radius 8cm.
AB and AC are tangents to the circle.
AO = 11cm

Work out the length of arc BDC

$\cos x = \frac{8}{11}$ $x = 43.3417..^\circ$

$\angle BOC = 86.68..^\circ$

$360 - \angle BOC = 273.31..^\circ$

$\frac{273.31..}{360} \times \pi \times 16 = 38.162\text{cm}$

Work out the area of minor sector BOC

$\frac{86.68..}{360} \times \pi \times 8^2 = 48.413\text{cm}^2$

The area of the rectangle is greater than 10cm^2

Work out the range of possible values of x

$(2x-1)(x+2) > 10$

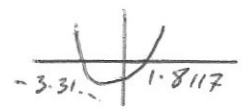
$2x^2 + 3x - 2 > 10$

$2x^2 + 3x - 12 > 0$

$a = 2 \quad b = 3 \quad c = -12$

$x = \frac{-3 \pm \sqrt{9 - -96}}{4}$

$x = 1.8117..$ or $x = -3.3117..$



$x > 1.8117..$