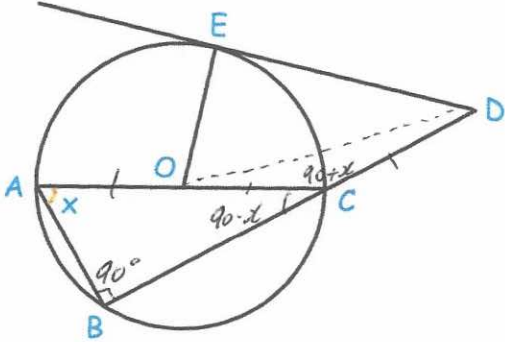


19th October	
<p>A circle has equation $(x - 7)^2 + (y + 3)^2 = 36$</p> <p>State, with a reason, whether this circle intersects the x-axis</p> <p>Centre $(7, -3)$ radius is 6</p>	<p style="text-align: right;">Corbettmaths</p> <p>yes as the centre of the circle is $(7, -3)$ and the point $(7, 3)$ is on the circle, it will intersect the x-axis twice.</p>
<p>Expand and simplify</p> <p>$(1 + x)^5$</p> $ \begin{array}{cccccc} & & & & 1 & & & & \\ & & & & 1 & 2 & 1 & & \\ & & & 1 & 3 & 3 & 1 & & \\ & & 1 & 4 & 6 & 4 & 1 & & \\ 1 & 5 & 10 & 10 & 5 & 1 & & & \end{array} $	$1 + 5x + 10x^2 + 10x^3 + 5x^4 + x^5$ <p style="text-align: center;"><u>or</u></p> $x^5 + 5x^4 + 10x^3 + 10x^2 + 5x + 1$
<p>$f(x) = \sin x$ for $90^\circ \leq x \leq 120^\circ$</p> <p>Work out the range of $f(x)$</p> <p>$\sin(90) = 1$</p> <p>$\sin(120) = \frac{\sqrt{3}}{2}$</p>	$\frac{\sqrt{3}}{2} \leq f(x) \leq 1$
 <p>AC is the diameter of a circle, centre O. DE is the tangent to the circle. BCD is a straight line. AO = CD Angle BAC = x</p>	<p>Express angle COD in terms of x.</p> <p>$\angle ABC = 90^\circ$ (angle in semi-circle)</p> <p>$\angle ACB = (90 - x)^\circ$ (angles in a triangle add to 180°)</p> <p>$\angle OCD = 90 + x$ (angles in a straight line add to 180°)</p> <p>$\triangle OCD$ is isosceles.</p> <p>$180 - (90 + x) = 90 - x$</p> <p>$(90 - x) \div 2 = 45 - \frac{1}{2}x$</p>