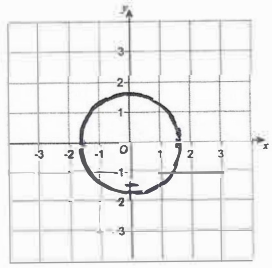
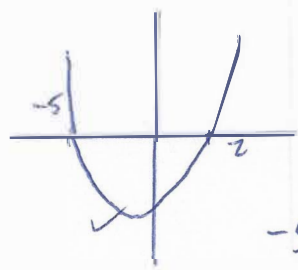
Name: ______________ 5-a-day **Higher Plus**

16th February

Corbettmaths

The cosine rule is $a^2 = b^2 + c^2 - 2bc\cos A$. Make cos A the subject.	$a^2 + 2bc\cos A = b^2 + c^2$ $2bc\cos A = b^2 + c^2 - a^2$ $\cos A = \dfrac{b^2 + c^2 - a^2}{2bc}$
Sketch $x^2 + y^2 = 2.25$ $r = \sqrt{2.25}$ $= 1.5$	
Solve the inequality $x^2 + 3x \leq 10$ $x^2 + 3x - 10 \leq 0$ $(x+5)(x-2)$ $x = -5$ $x = 2$	 $-5 \leq x \leq 2$
A bag contains 7 red sweets and 5 green sweets. Kelly removes 3 sweets, one at a time, without replacement. Find the probability that she does not choose 3 sweets that are the same colour. $1 - P(\text{same})$	$P(RRR) = \frac{7}{12} \times \frac{6}{11} \times \frac{5}{10} = \frac{7}{44}$ $P(GGG) = 5/12 \times 4/11 \times 3/10 = 1/22$ $1 - \left(\frac{7}{44} + 1/22\right) = 35/44$
Use the iteration $$x_{n+1} = 7 - \frac{1}{x_n}$$ to find an approximation solution to $x^2 - 7x + 1 = 0$ $x \approx 6.854$	Start with $x_1 = 1$ $x_2 = 6$ $\left(7 - \frac{1}{1}\right)$ $x_3 = 6.8\dot{3}$ $\left(7 - \frac{1}{6}\right)$ $x_4 = 6.8536..$ $\left(7 - \frac{1}{6.8\dot{3}}\right)$

$x_5 = 6.85409..$ $(7 - 1/6.8536..)$