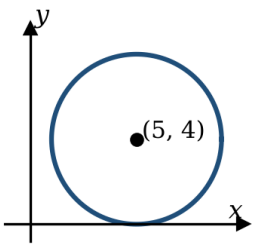
Day 144	A Level Maths: C Tier 10-a-day
1 Two forces of magnitudes 9 N and 12 N act on a boat at right angles to each other. Find (a) the magnitude of the resultant, (b) the angle it makes with the 9 N force, to 1 d.p.	
2 For 7 data pairs, with hours of revision from 4 to 14, the regression line is E = 13 + 6h. Estimate exam score when h = 2 and comment on the reliability.	
3 $f(x) = x^3 - 2x - 5$. Show that f(x) = 0 has a root between x = 2 and x = 3.	
4 The diagram shows a circle with the centre marked. The circle touches the x-axis. Find the equation of the circle. 	
5 For events A and B, P(A) = 0.45, P(B) = 0.35 and P(A ∪ B) = 0.6. (a) Find P(A ∩ B). (b) Find P(A′ ∩ B′).	

Day 144	A Level Maths: C Tier 10-a-day
6 Express $\frac{x - 15}{(x + 1)(x - 3)}$ in partial fractions.	
7 Two forces $(6\mathbf{i} + 5\mathbf{j})$ N and $(9\mathbf{i})$ N act on a particle of mass 5 kg. No other horizontal forces act. Find the acceleration of the particle as a vector in terms of $\mathbf{i}$ and $\mathbf{j}$.	
8 A curve has equation $3x^2 + y^2 = 13$. Find dy/dx in terms of x and y, and hence the gradient at (2, 1).	
9 Find the set of values of x satisfying both $2x - 3 > -1$ and $x^2 + 3x - 10 < 0$.	
10 Variables x and y satisfy $y = ax^n$. A graph of $\log_{10} y$ against $\log_{10} x$ is a straight line with gradient 3 and intercept 1.3. Find n and a, giving a to 3 significant figures.	