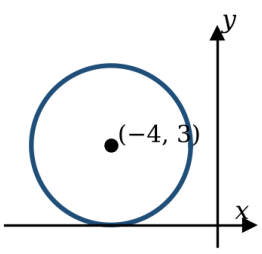
Day 287	A Level Maths: C Tier 10-a-day
1 A curve has parametric equations $x = t + 3$, $y = 2t^2 - 6$. Find the coordinates of the point where $t = 1$.	
2 Find the gradient of the curve $y = (x^2 + 4)^2$ at the point where $x = 0$.	
3 The values x are coded using $y = (x - 20) \div 5$. The coded values have mean $\bar{y} = 0.6$ and standard deviation 0.5. Find the mean and standard deviation of x.	
4 $f(x) = e^x - 4$. Use the Newton-Raphson method with $x_0 = 1$ to find x_1 and x_2, giving your answer to 3 decimal places.	
5 The diagram shows a circle with the centre marked. The circle touches the x-axis. Find the equation of the circle. 	

Day 287	A Level Maths: C Tier 10-a-day
6 Car A passes a point O at constant speed 5.5 m s^{-1}. At that instant car B starts from rest at O with constant acceleration 1 m s^{-2} in the same direction. Find the time when B catches up A.	
7 X ~ B(60, 0.3). Use a normal approximation to find P(X ≤ 18), to 3 s.f.	
8 A stone is thrown vertically downwards at 5 m s^{-1} from the top of a cliff and hits the sea after 4 s. Taking g = 9.8 m s^{-2}, find the height of the cliff.	
9 Use the product rule to differentiate $y = x^2 \sin 4x$.	
10 Find the set of values of k for which $x^2 + kx + 4 = 0$ has two distinct real roots.	