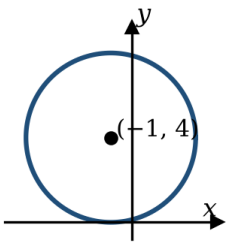
Day 212	A Level Maths: C Tier 10-a-day
1 Solve $\log_2 x = 3$.	
2 $X \sim N(95, 8^2)$. Given that $P(X > a) = 0.8$, find a to 3 s.f.	
3 A cyclist moving in a straight line has initial speed 1 m s^{-1} and constant acceleration 1.5 m s^{-2}. Find her speed after 7 s.	
4 Find the sum of the first 8 terms of the geometric series 1 + 3 + 9 + ...	
5 Use $\sin\theta \approx \theta$ and $\cos\theta \approx 1 - \frac{\theta^2}{2}$ to estimate $\frac{\sin 0.15}{\cos 0.15}$.	

Day 212	A Level Maths: C Tier 10-a-day

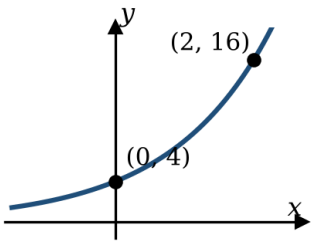
6 The diagram shows a circle with the centre marked.
The circle touches the x-axis. Find the equation of the circle.



7 A particle moves in a straight line. Its velocity at time t seconds ($0 \leq t \leq 4$) is $v = (-2t^2 + 8t)$ m s^{-1}. Find the maximum velocity and the time at which it occurs.

8 Given that $dy/dx = 2y$ and $y = 2$ when $x = 0$, find y in terms of x.

9 The diagram shows the curve $y = ab^x$, where $b > 0$.
Find the values of a and b.



10 X ~ B(25, p). H_0: $p = 0.4$, H_1: $p < 0.4$.
Find the critical region for a test at the 5% significance level.