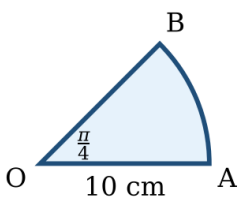
Day 175	A Level Maths: C Tier 10-a-day
1 A resultant force of 8 N gives a body an acceleration of 4 m s^{-2}. Find the mass of the body.	
2 Given that $\log_2 x = p$, write the following in terms of p: (a) $\log_2 x^2$ (b) $\log_2 (4x)$	
3 A particle of mass 8 kg changes its speed from 5 m s^{-1} to 8 m s^{-1}. Find the increase in its kinetic energy.	
4 Simplify $\sqrt{45} + \sqrt{125}$, giving your answer in the form $p\sqrt{5}$.	
5 The diagram shows sector OAB of a circle. Find, in terms of π, (a) the arc length AB, (b) the area of the sector. 	

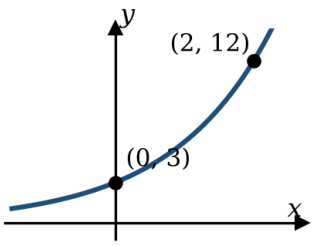
Day 175	A Level Maths: C Tier 10-a-day

6 A is (0, 3) and B is (−8, −1).
Find the equation of the perpendicular bisector of AB, in the form ax + by = c with integer a, b and c.

7 Given that $dy/dx = \frac{x}{y}$ and y = 5 when x = 0,
find y^2 in terms of x.

8 X ~ B(60, 0.4). Use a normal approximation to find P(X ≤ 20), to 3 s.f.

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



10 X has probability density function $f(x) = \frac{1}{8}x$ for 0 ≤ x ≤ 4, and 0 otherwise.
Find P(X < 3).