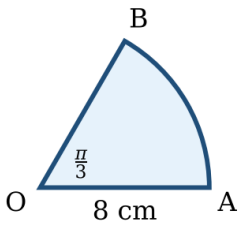
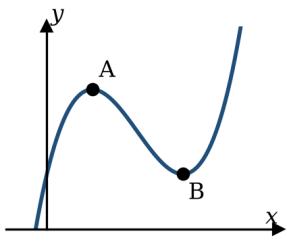
Day 239	A Level Maths: C Tier 10-a-day
1 A and B are mutually exclusive, with P(A) = 0.55 and P(B) = 0.05. (a) Find P(A ∪ B). (b) Find the probability that neither A nor B happens.	
2 Evaluate $\sum_{r=1}^{13} (2r + 3)$.	
3 The diagram shows sector OAB of a circle. Find, in terms of π, (a) the arc length AB, (b) the area of the sector. 	
4 A car of mass 800 kg tows a caravan of mass 800 kg on a level road with acceleration 0.5 m s^{-2}. Resistances: 400 N on the car, 100 N on the caravan. Find the driving force and the tow bar tension.	
5 A researcher wants to find out the satisfaction of the customers of a shop. Give one advantage and one disadvantage of using quota sampling.	

Day 239	A Level Maths: C Tier 10-a-day
6 A stone is projected from level ground with velocity $(6\mathbf{i} + 29.4\mathbf{j})$ m s^{-1} ($\mathbf{i}$ horizontal, $\mathbf{j}$ vertically up). Take g = 9.8 m s^{-2}. (a) Find the time of flight. (b) Find the horizontal range.	
7 Find the first four terms, in ascending powers of x, of the expansion of $(1 - x)^8$.	
8 The diagram shows the curve $y = x^3 - 6x^2 + 9x + 4$. A and B are turning points. Find the coordinates of A and B. 	
9 $(x - 2)$ is a factor of $x^3 + kx^2 - 6x + 24$. Find the value of k.	
10 Use the quotient rule to find the derivative of $y = \frac{e^{4x}}{x}$.	