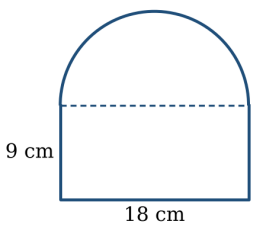
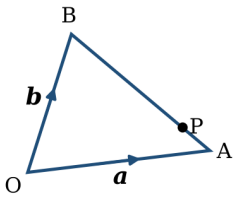
Day 296	A Tier 10-a-day
1 The curve C has equation $y = x^2 - 6x + 5$ (a) Find the coordinates of the points where C crosses the x-axis. (b) Find the coordinates of the turning point of C.	
2 Aisha runs around a track in 90 seconds. Mo runs around the same track in 75 seconds. They start together at the start line and keep running. How many laps will each have run when they are next together at the start line?	
3 Here are the first four terms of a sequence. 6, 8, 10, 12 (a) Find an expression for the nth term. (b) Work out the 50th term.	
4 Work out the value of (a) $(\frac{3}{4})^{-2}$ (b) $16^{\frac{-1}{4}}$	
5 The diagram shows a shape made from a rectangle and a semicircle. Work out the perimeter of the shape. Give your answer in terms of π. The diagram is not drawn accurately. 	

Day 296	A Tier 10-a-day
6 There are 37 students in a class. 23 students do drama and 19 students do choir. 4 students do neither. (a) Work out how many students do both. (b) One student is chosen at random. Find the probability that they do drama only.	
7 Expand and simplify $(x - 1)(2x + 1)(x - 1)$	
8 A shop sells rice in 3 different sizes. Small bag: 200 g for £1.70 Medium bag: 250 g for £1.85 Large bag: 500 g for £3.85 Which bag is the best value for money? You must show your working.	
9 OAB is a triangle. $\overrightarrow{OA} = \mathbf{a}$ and $\overrightarrow{OB} = \mathbf{b}$. P is the point on AB such that AP : PB = 1 : 4. Find $\overrightarrow{OP}$ in terms of $\mathbf{a}$ and $\mathbf{b}$. 	
10 Work out $2.5 \times (1 + 2.7 \div 100)^3$ (Calculator) Give your answer correct to 3 significant figures.	