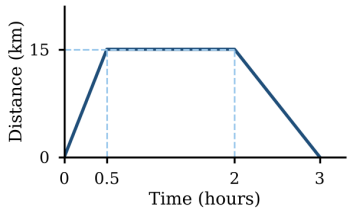
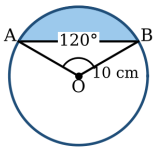
Day 168	S Tier 10-a-day
1 The point P(5, 2) is rotated 180° about the origin. The image is then rotated 90° clockwise about the origin. (a) Write down the coordinates of the final image of P. (b) Describe fully the single transformation that is equivalent to these two transformations.	
2 The graph shows Maya's cycle ride to a café and back. (a) Work out Maya's speed on the way back. (b) Work out Maya's average speed for the whole ride, including the stop. 	
3 The distance to a village is 82 km, correct to the nearest whole number. Write down the error interval for the distance to a village, using d.	
4 Two shapes are mathematically similar. The smaller has height 8 cm and area 20 cm^2. The larger has area 125 cm^2. Work out the height of the larger shape.	
5 Solve $x^2 + 3x - 10 \geq 0$	

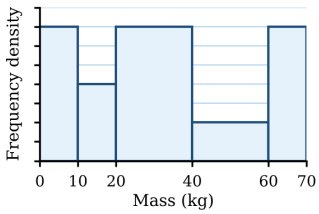
Day 168 **S Tier 10-a-day**

6 The circle has centre O and radius 10 cm. A and B are points on the circle and angle AOB = 120°. (Calculator)
Work out the area of the shaded segment. Give your answer correct to 3 significant figures.
The diagram is not drawn accurately.



7 The 3rd term of a geometric sequence is 96.
The 6th term of the sequence is −768.
(a) Work out the common ratio.
(b) Work out the first term.

8 The histogram shows the masses of parcels delivered by a courier.
280 of them had a mass between 0 and 10 kg.
(a) How many had a mass between 10 and 20 kg?
(b) How many parcels are there in total?



9 A metal block has a mass of 1000 g, correct to the nearest 100.
Its volume is 3.6 cm^3, correct to 1 decimal place.
Work out the lower bound of the density.
Give your answer correct to 3 significant figures. (Calculator)

10 The line $y = 2x + k$ is a tangent to the curve $y = x^2 - 5x + 1$.
Find the value of k.