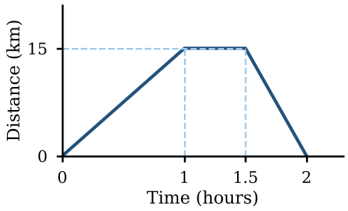
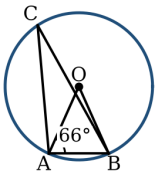
Day 79	S Tier 10-a-day
1 The mean of 5 numbers is 87. One number is removed and the mean of the remaining 4 numbers is 105.75. Work out the number that was removed.	
2 The diagram shows a running track made from a rectangle and two semicircles. (a) Work out the total length of the boundary of the track. (b) Work out the area enclosed by the track. Give your answers in terms of π. The diagram is not drawn accurately. 	
3 The graph shows Fatima's cycle ride to a café and back. (a) Work out Fatima's speed on the way back. (b) Work out Fatima's average speed for the whole ride, including the stop. 	
4 A sector of a circle has angle 120° and area 75π cm^2. (a) Work out the radius of the circle. (b) Work out the length of the arc of the sector. Give your answer to (b) in terms of π.	
5 a = 5.9 and b = 3.7, both correct to 1 decimal place. Work out the upper bound of a − b.	

Day 79 **S Tier 10-a-day**

6 A, B and C are points on a circle, centre O.
Angle OAB = 66°.
(a) Work out the size of angle AOB.
(b) Work out the size of angle ACB.
The diagram is not drawn accurately.



7 Tariq and Grace play a match. The first to win 2 tennis sets wins the match.
The probability that Tariq wins any one of the tennis sets is $\frac{7}{10}$.
Work out the probability that the match needs a third one to decide it.

8 Simplify fully $\frac{x^2 - 6x + 8}{x^2 + 6x} \times \frac{x^2 - x}{x - 4}$

9 The price of a car is increased by x%.
The new price is then decreased by x%.
The final price is 25% less than the original price.
Work out the value of x.

10 (a) Show that the equation $x^3 - 2x - 30 = 0$ has a solution between x = 3 and x = 4.
(b) Show that the equation can be rearranged to give $x = \sqrt[3]{2x + 30}$