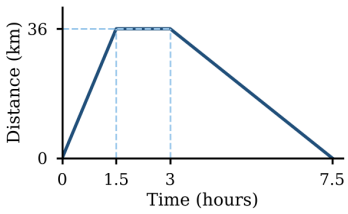
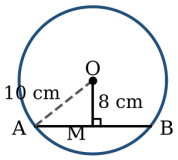
Day 227 **S Tier 10-a-day**

1 Solve $x^{\frac{2}{3}} = 4$
$x > 0$

2 The graph shows Priya's cycle ride to a café and back.
(a) Work out Priya's speed on the way back.
(b) Work out Priya's average speed for the whole ride, including the stop.



3 AB is a chord of a circle, centre O. M is the midpoint of AB. (Calculator)
(a) Work out the length of the chord AB.
(b) Work out angle AOB, to 1 decimal place.
The diagram is not drawn accurately.



4 Rationalise the denominator of $\frac{24}{4\sqrt{7}}$
Give your answer in its simplest form.

5 Work out the exact value of $(\tan 60°)^2 + \sin 60°$
Give your answer in its simplest form, as a fraction or surd. Do not use a calculator.

Day 227	S Tier 10-a-day
6 A bag contains 2 orange cubes, 4 purple cubes and 1 pink cube. Two cubes are taken at random without replacement. Work out the probability that (a) they are different colours, (b) at least one is orange.	
7 Solve the simultaneous equations $3x - y = 25$ $6x + y = 38$	
8 Given that $x > 0$, solve $x^{\frac{5}{4}} = 1024$	
9 A circle has equation $x^2 + y^2 = 169$. The point P(5, 12) lies on the circle. (a) Find the equation of the tangent to the circle at P. Give your answer in the form $ax + by = c$, where a, b and c are integers. (b) The tangent meets the x-axis at the point T. Write down the coordinates of T.	
10 a = 33 and b = 94, both correct to 3 significant figures. Work out $a \div b$. Write down your answer to a suitable degree of accuracy. You must show your working and give a reason for your answer. (Calculator)	