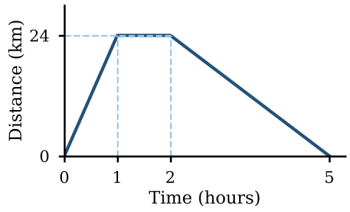
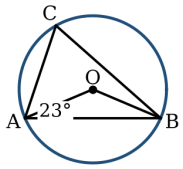
Day 250 **S Tier 10-a-day**

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



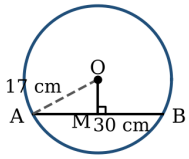
2 The HCF of two numbers is 4 and their LCM is 168.
One of the numbers is 24.
Work out the other number.

3 A, B and C are points on a circle, centre O.
Angle OAB = 23°.
(a) Work out the size of angle AOB.
(b) Work out the size of angle ACB.
The diagram is not drawn accurately.



4 The ratio of Year 10 students to Year 11 students in a school is 2 : 3.
50% of the Year 10 students and 45% of the Year 11 students have a part-time job.
What percentage of all of these students have a part-time job?

5 A is the point (4, −1) and B is the point (−2, 3).
Find an equation of the perpendicular bisector of AB. Give your answer in the form ax + by = c, where a, b and c are integers.

Day 250	S Tier 10-a-day
6 Write $\frac{8^{n-1} \times 2^{n+3}}{2^n}$ in the form 2^{an+c} where a and c are integers.	
7 $f(x) = -3x - 5$ and $g(x) = x^2 - 3$ Solve $fg(x) = gf(x)$	
8 AB is a chord of a circle, centre O. M is the midpoint of AB. (Calculator) (a) Work out the length OM. (b) Work out angle AOB, to 1 decimal place. The diagram is not drawn accurately. 	
9 Lena puts £4,000 in a savings account. Compound interest is paid at 3% in year 1, 3% in year 2 and 2% in year 3. Work out the amount in the account at the end of year 3. Give your answer to the nearest penny. (Calculator)	
10 T is directly proportional to the square of l. When l = 2, T = 36. (a) Find a formula for T in terms of l. (b) Find the value of l when T = 225.	