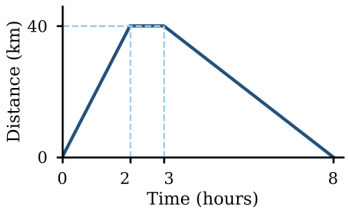
Day 177 **S Tier 10-a-day**

1 The sum of the interior angles of a polygon is 2340°.
Work out the number of sides of the polygon.

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



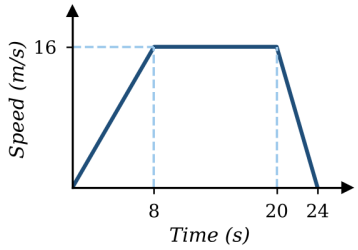
3 Triangle T has vertices A(0, −1), B(−4, 1), C(−4, −3).
T is enlarged with scale factor $\frac{3}{2}$ and centre (−2, −3).
(a) Write down the coordinates of the image of A.
(b) The area of T is 15 square units. Work out the area of the image of T.

4 A tank is filled by a tap in 12 minutes.
A drain can empty the full tank in 20 minutes.
The tap and the drain are both open, and the tank is empty to begin with.
How long does it take for the tank to fill?

5 Given that $\sqrt{18} - \sqrt{2} = \sqrt{n}$,
find the value of n.

Day 177 **S Tier 10-a-day**

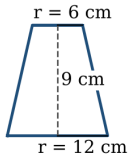
6 The graph shows the speed of a cyclist during a journey.
(a) Work out the deceleration in the last 4 seconds.
(b) Work out the average speed over the whole journey.



7 In a group of students, 30% are boys and the rest are girls.
60% of the boys and 10% of the girls walk to school.
What percentage of all the students walk to school?

8 A circle has equation $(x - 2)^2 + (y - 2)^2 = 50$.
The point P(9, 3) lies on the circle.
Find an 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.

9 A cone is cut parallel to its base to make a smaller cone and a frustum.
The frustum has height 9 cm, top radius 6 cm and base radius 12 cm.
Work out the volume of the frustum. Give your answer in terms of π.



10 Solve $3x^2 \leq 15x + 18$