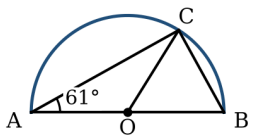
Day 26	S Tier 10-a-day

1 Hassan sets off at 8:00 and cycles at 24 km/h along a path.
Priya sets off from the same place at 9:00 and cycles at 34 km/h along the same path.
At what time does Priya catch up with Hassan?

2 AB is a diameter of a circle, centre O. C is a point on the circle. Angle BAC = 61°.
(a) Work out the size of angle ACB.
(b) Work out the size of angle COB.
The diagram is not drawn accurately.



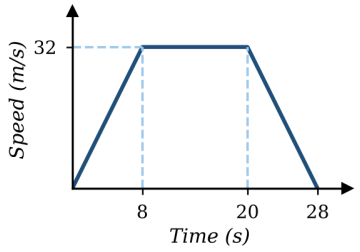
3 Solve the simultaneous equations
$2x - y = 7$
$-3x - 5y = -4$

4 A concrete slab in the shape of a cuboid weighs 960 N.
Its smallest face has area 200 cm^2. Its largest face has area 2,000 cm^2.
Pressure = force ÷ area
Work out (a) the greatest pressure and (b) the least pressure the concrete slab can exert on the ground, in N/m^2.

5 Show that $(6 - 3\sqrt{3})(6 + 3\sqrt{3})$ is an integer.

Day 26 **S Tier 10-a-day**

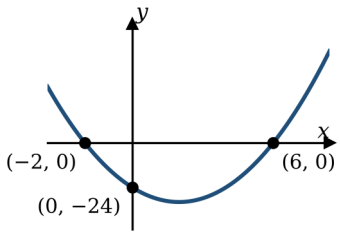
6 The graph shows the speed of a train between two stations.
(a) Work out the acceleration in the first 8 seconds.
(b) Work out the total distance.



7 A circular arc has a chord AB of length 18 cm.
The greatest distance between the chord and the arc is 1 cm.
Work out the radius of the circle.

8 A sector of a circle has radius 10 cm and angle 288°.
The sector is made into a cone by joining the two straight edges together.
(a) Work out the radius of the base of the cone.
(b) Work out the exact volume of the cone.
Give your answer in terms of π, as a surd if necessary.

9 The diagram shows a sketch of a quadratic curve. It crosses the axes at the points shown.
Find an equation of the curve.
Give your answer in the form $y = ax^2 + bx + c$.



10 Show that $\sqrt{21 + 4\sqrt{5}} = 1 + 2\sqrt{5}$