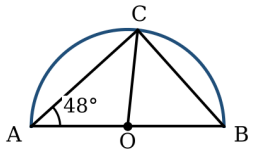
Day 344	S Tier 10-a-day

1 AB is a diameter of a circle, centre O. C is a point on the circle. Angle BAC = 48°.
(a) Work out the size of angle ACB.
(b) Work out the size of angle COB.
The diagram is not drawn accurately.

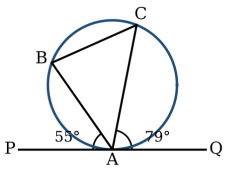


2 A red light flashes every 4 minutes.
A blue light flashes every 12 minutes.
A green light flashes every 24 minutes.
They all flash together at 6:00 am.
(a) At what time do they next flash together?

3 A metal crate in the shape of a cuboid weighs 210 N.
Its smallest face has area 150 cm^2. Its largest face has area 250 cm^2.
Pressure = force ÷ area
Work out (a) the greatest pressure and (b) the least pressure the metal crate can exert on the ground, in N/m^2.

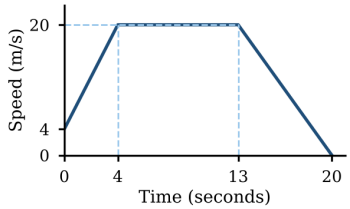
4 (a) Solve $2 - 2x > 8$
(b) n is an integer. Write down all the values of n that satisfy
$-2 \leq 3n + 4 \leq 16$

5 PAQ is a tangent to the circle at A. B and C are points on the circle. Angle PAB = 55° and angle CAQ = 79°.
(a) Work out the size of angle ABC.
(b) Work out the size of angle ACB.
The diagram is not drawn accurately.



Day 344 **S Tier 10-a-day**

6 The graph shows the speed of a train during 20 seconds.
(a) Work out the acceleration during the first 4 seconds.
(b) Work out the average speed over the whole 20 seconds.



7 Simplify fully $\frac{x^2 + 6x - 7}{x^2 + 2x} \times \frac{x^2 - 5x}{x + 7}$

8 A and B are the points $(3, -6)$ and $(-9, 0)$.
AB is a diameter of a circle.
Find an equation of the circle.

9 The volume of a cube is 801 cm^3, correct to the nearest cm^3.
Work out the lower bound of the edge length of the cube.
Give your answer correct to 3 significant figures. (Calculator)

10 Priya and Noah share some money in the ratio 9 : 4.
Priya gives Noah £68.
The ratio of their money is now 1 : 8.
How much money do they have altogether?