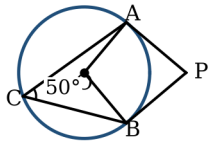
Day 216 **S Tier 10-a-day**

1 The capacity of a tank is 0.24 litres, truncated to 2 decimal places.
Write down the error interval for the capacity of a tank, using c.

2 PA and PB are tangents to a circle, centre O. C is a point on the circle. Angle ACB = 50°.
(a) Work out the size of angle AOB.
(b) Work out the size of angle APB.
The diagram is not drawn accurately.



3 Factorise fully $36x^2 - 4y^2$

4 The table gives information about the times of some people.
Work out an estimate for the mean time.
Give your answer correct to 1 decimal place.
(Calculator)

Time, t (minutes)	Frequency density
$0 < t \leq 10$	1.2
$10 < t \leq 20$	1.2
$20 < t \leq 40$	1.7
$40 < t \leq 60$	0.8

5 Solve $7 \sin x + 2 = 0$ for $0° \leq x \leq 360°$.
(Calculator)
Give your answers correct to 1 decimal place.

Day 216	S Tier 10-a-day
6 Dina invests £1,000 for 5 years at 4.5% per year simple interest. Beth invests £1,000 for 5 years at 4.5% per year compound interest. Work out how much more interest Beth earns than Dina. Give your answer to the nearest penny. (Calculator)	
7 The time for a pendulum to swing is directly proportional to the square root of the length of the pendulum. The length of the pendulum is increased by 21%. Work out the percentage change in the time for a pendulum to swing.	
8 (a) Show that the equation $x^3 + x - 24 = 0$ has a solution between $x = 2$ and $x = 3$. (b) Show that the equation can be rearranged to give $x = \sqrt[3]{24 - x}$	
9 How many factors does 140 have? Include 1 and 140.	
10 The line $y = kx - 5$ is a tangent to the curve $y = x^2 + 5$. Find the possible values of k. Give any surds in their simplest form.	