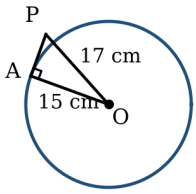
Day 198 **A Tier 10-a-day**

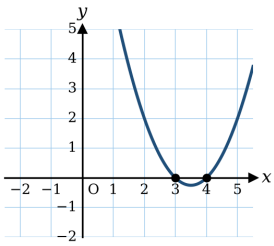
1 Work out $(4.5 \times 10^9) \times (5 \times 10^6)$
Give your answer in standard form.

2 A lorry travels at 27 km/h.
Work out this speed in metres per minute.

3 PA is a tangent to a circle with centre O. A is on the circle.
The radius is 15 cm and OP = 17 cm.
Work out the length of PA.
The diagram is not drawn accurately.



4 The diagram shows the graph of $y = x^2 + bx + c$.
Find the value of b and the value of c.



5 The price of a games console is decreased by 40%.
The new price is then decreased by 30%.
Work out the overall percentage change.

Day 198	A Tier 10-a-day
6 The line L has equation $y = 5x + 1$ Find the equation of the line that is perpendicular to L and passes through the point (0, 3).	
7 (a) Show that $0.\dot{7}\dot{5} = \frac{25}{33}$ (b) Hence write $5.\dot{7}\dot{5}$ as a mixed number in its simplest form.	
8 XYZ is a right-angled triangle with the right angle at Y. XY = 8 cm and angle YXZ = 60°. Work out the exact length of YZ. Do not use a calculator.	
9 Solve the simultaneous equations $x^2 + y^2 = 25$ $y = 3x + 5$	
10 A sphere has radius 15 cm. Work out the surface area of the sphere. Give your answer in terms of π.	