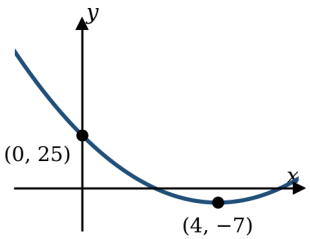
Day 174	S Tier 10-a-day

1 Each interior angle of a regular polygon is 19 times the size of each exterior angle.
Work out the number of sides of the polygon.

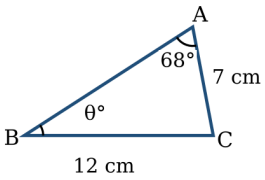
2 Show that $0.4\dot{9}7\dot{6} = \frac{2486}{4995}$

3 A sector of a circle has radius 10 cm and angle 45°.
(a) Work out the length of the arc of the sector.
(b) Work out the area of the sector. Give each answer in terms of π.

4 The diagram shows a sketch of a quadratic curve with a turning point at (4, −7).
The curve crosses the y-axis at (0, 25).
Find an equation of the curve.
Give your answer in the form $y = ax^2 + bx + c$.



5 The diagram shows triangle ABC. (Calculator)
Angle BAC = 68° and angle ABC is acute.
Work out the size of angle ABC, marked θ.
Give your answer correct to 1 decimal place.
The diagram is not drawn accurately.



Day 174	S Tier 10-a-day
6 Work out $(4.5 \times 10^{-5}) - (7.8 \times 10^{-8})$ Give your answer in standard form.	
7 The mean of the marks in a test for the Year 10 students is 72. The mean of the marks in a test for the Year 11 students is 66. The mean for all of the Year 10 students and Year 11 students together is 71. Work out the ratio of the number of Year 10 students to the number of Year 11 students.	
8 Write $12^2 \times 36^3$ as a product of powers of prime numbers.	
9 Show that the line $y = -2x + 20$ is a tangent to the circle $x^2 + y^2 = 80$. Find the coordinates of the point where the line touches the circle.	
10 9 workers can build a wall in 15 days. After 3 days, 6 of the workers leave. The rest carry on working at the same rate. How many more days does it take to finish?	