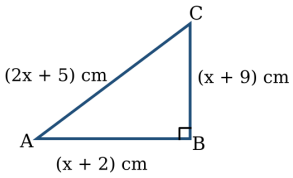
Day 131	S Tier 10-a-day
1 The sum of the interior angles of a polygon is 2880°. Work out the number of sides of the polygon.	
2 18 machines can make a batch of bolts in 30 hours. After 4 hours, 6 of the machines leave. The rest carry on working at the same rate. How many more hours does it take to finish?	
3 $f(x) = 3x - 1$ and $g(x) = x^2 - 1$ (a) Find $gf(x)$. Give your answer in the form $ax^2 + bx + c$. (b) Solve $gf(x) = 195$	
4 A cyclist travels the first half of a journey at 20 km/h. It travels the second half of the same journey at 80 km/h. Work out the average speed for the whole journey.	
5 A is the point $(-5, -4)$ and B is the point $(3, -2)$. Find an equation of the perpendicular bisector of AB. Give your answer in the form $ax + by = c$, where a, b and c are integers.	

Day 131 **S Tier 10-a-day**

6 Uma invests £10,000.
The account pays compound interest of 4% a year for the first 2 years,
then 1% a year for the next 2 years.
Work out the total amount after 4 years, to the nearest penny. (Calculator)

7 ABC is a right-angled triangle with sides (x + 2) cm, (x + 9) cm and (2x + 5) cm. The longest side is (2x + 5) cm.
(a) Find the value of x.
(b) Work out the area of the triangle.
The diagram is not drawn accurately.



8 The equation $kx^2 - 7x + 1 = 0$ has equal roots.
Find the value of k.

9 Simplify $\frac{1}{3+\sqrt{3}} - \frac{1}{3-\sqrt{3}}$
Give your answer with a rational denominator.

10 The cumulative frequency graph gives information about the times of 100 students to complete a puzzle.
(a) Find an estimate for the median and the interquartile range.
(b) Estimate how many of the 100 had a time greater than 55.

