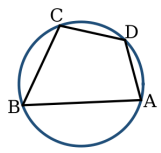
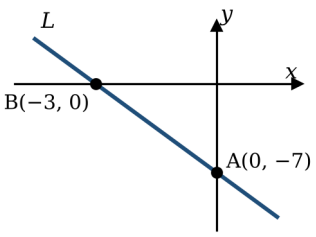
Day 140	S Tier 10-a-day
1 Work out the exact value of $\sin 45° \times \tan 30°$ Give your answer in its simplest form, as a fraction or surd. Do not use a calculator.	
2 Write these numbers in order of size, starting with the largest. 38%, $\frac{2}{5}$, 0.61, 51%	
3 A and B are points on the curve $y = x^3 - x$. The x coordinate of A is -3 and the x coordinate of B is 0. Work out the gradient of the line AB.	
4 A, B, C and D are points on a circle. Angle DAB = $(4x + 15)°$, angle BCD = $(3x - 17)°$ and angle ABC = $(2x + 10)°$. (a) Work out the value of x. (b) Work out the size of angle ADC. The diagram is not drawn accurately. 	
5 Here are six numbers. $\sqrt{49}$, $(\sqrt{3})^2$, $\sqrt[3]{27}$, $\sqrt{50}$, $\sqrt{0.25}$, $\sqrt{3} \times \sqrt{5}$ Write down the irrational numbers.	

Day 140 **S Tier 10-a-day**

6 The graph of y = f(x) has a maximum point at (5, −4).
Write down the coordinates of the turning point of the graph of
(a) y = −f(x)
(b) y = 2f(−x)

7 The diagram shows the straight line L, which passes through the points A and B.
The line M is perpendicular to L and passes through B.
Find the equation of M in the form y = mx + c.



8 y is inversely proportional to x.
When x = 5, y = 6.
Find the positive value of x when y = 15.

9 $f(x) = \frac{x + 3}{3x - 1}$ where $x \neq \frac{1}{3}$
(a) Show that ff(x) = x.
(b) Write down $f^{-1}(x)$.

10 The table gives information about 98 lengths.
Work out an estimate for the median.
Assume the values in each class are evenly spread.

Length, l (cm)	Frequency
$0 < l \leq 10$	15
$10 < l \leq 20$	22
$20 < l \leq 30$	30
$30 < l \leq 40$	13
$40 < l \leq 50$	18