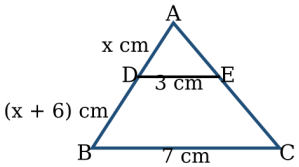
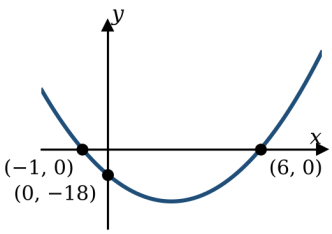
Day 233	S Tier 10-a-day
1 Write these numbers in order of size, starting with the smallest. 0.73, $\frac{14}{17}$, 42%, 0.84	
2 A sector of a circle has radius 9 cm. The length of the arc of the sector is $\frac{3}{2}\pi$ cm. (a) Work out the angle of the sector. (b) Work out the area of the sector. Give your answer to (b) in terms of π.	
3 (a) Show that the equation $x^3 - 8x - 7 = 0$ has a solution between x = 3 and x = 4. (b) Show that the equation can be rearranged to give $x = \sqrt[3]{8x + 7}$	
4 Write $9^2 \times 8^4$ as a product of powers of prime numbers.	
5 In the diagram, DE is parallel to BC. AD = x cm, DB = (x + 6) cm, DE = 3 cm and BC = 7 cm. (a) Find the value of x. (b) Work out the length of AB. The diagram is not drawn accurately. 	

Day 233	S Tier 10-a-day

6 A fair 6-sided dice and a spinner numbered 1 to 5 are each thrown once. The first score and the second score are recorded.
(a) Work out the probability that the sum is greater than 5.
(b) Given that at least one number is 3, work out the probability that the sum is greater than 5.

7 The diagram shows a sketch of a quadratic curve. It crosses the axes at the points shown.
Find an equation of the curve.
Give your answer in the form $y = ax^2 + bx + c$.



8 In triangle PQR, PQ = 15 cm and angle PQR = 60°.
The area of the triangle is $15\sqrt{3}$ cm^2.
Work out the length of QR.
Do not use a calculator.

9 In a coach, the ratio of the number of adults to the number of children is 8 : 7.
Then 8 more adults are added and 2 more children are added.
The ratio is now 4 : 3.
How many children were there at the start?

10 The line $y = kx - 6$ is a tangent to the curve $y = x^2 - 2$.
Find the possible values of k.
Give any surds in their simplest form.