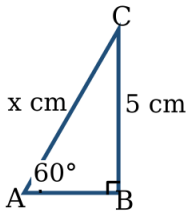
Day 92	S Tier 10-a-day
1 The mean of 9 numbers is 89. A new number is added and the mean of all 10 numbers is 80.7. Work out the new number.	
2 In triangle PQR, PQ = 12 cm and angle PQR = 45°. The area of the triangle is $60\sqrt{2}$ cm^2. Work out the length of QR. Do not use a calculator.	
3 Solve $6x^2 - 25x + 14 = 0$	
4 Here are five numbers: 1, $3x - 3$, $2x + 5$, $2x - 1$, $x - 3$. The mean of the five numbers is 11. (a) Work out the value of x. (b) Work out the range of the five numbers.	
5 Work out $(6 \times 10^8) \div (1.5 \times 10^{-7})$ Give your answer in standard form.	

Day 92	S Tier 10-a-day

6 ABC is a right-angled triangle.
Work out the exact value of x. Give your answer in its simplest form.
The diagram is not drawn accurately.



7 The lengths of the sides of a right-angled triangle are (x + 1) cm, (x − 6) cm and (x + 2) cm.
The longest side is (x + 2) cm.
(a) Show that $x^2 - 14x + 33 = 0$
(b) Hence work out the area of the triangle.

8 Write $\frac{9^n \times 3^{n-1}}{9^n}$ in the form 3^{an+c}
where a and c are integers.

9 x : y = 2 : 9
Work out the ratio (5x + 1y) : (3y − 3x)
Give your answer in its simplest form.

10 A rectangle has length 7.0 cm and width 4.8 cm, both correct to 1 decimal place.
Work out the upper bound of the perimeter of the rectangle.