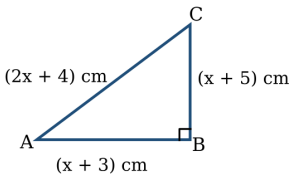
Day 199	S Tier 10-a-day
1 A flight leaves London at 20:25 (London time). It takes 9 hours 10 minutes. When it is 12:00 in London it is 04:00 in Los Angeles. At what time, in Los Angeles time, does the flight land? Say if it is on a different day.	
2 Triangle T has vertices A(−4, 6), B(8, 2), C(8, 0). T is enlarged with scale factor $\frac{3}{2}$ and centre (4, 0). (a) Write down the coordinates of the image of A. (b) The area of T is 6 square units. Work out the area of the image of T.	
3 A bag contains some counters. 7 of them are green and the rest are white. Two counters are taken at random without replacement. The probability that both are green is $\frac{21}{55}$. Work out how many counters are white.	
4 A and B are points on the curve $y = -x^2 - 6x + 5$. The x coordinate of A is −3 and the x coordinate of B is 1. Work out the gradient of the line AB.	
5 Q is 25% more than C. C is 30% less than B. Work out Q as a percentage of B.	

Day 199	S Tier 10-a-day

6 Solve $5 \tan x° + 2 = -3$ for $0 \leq x \leq 360$

7 ABC is a right-angled triangle with sides (x + 3) cm, (x + 5) cm and (2x + 4) cm. The longest side is (2x + 4) cm.
(a) Find the value of x.
(b) Work out the area of the triangle.
The diagram is not drawn accurately.



8 Jamal and Noah share some money in the ratio 5 : 7.
Jamal gives Noah £23.
The ratio of their money is now 1 : 6.
How much money do they have altogether?

9 The nth term of a sequence is $2n^2 + 4n - 9$.
(a) Work out the 8th term.
(b) Is 62 a term of the sequence? You must show your working.

10 A solid cone has base radius 6 cm and height 3 cm.
It is melted down and recast into a solid sphere.
Work out the radius of the sphere.
The volume of a cone is $\frac{1}{3}\pi r^2 h$ and the volume of a sphere is $\frac{4}{3}\pi r^3$.