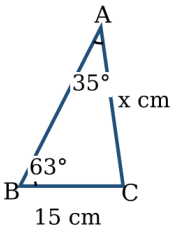
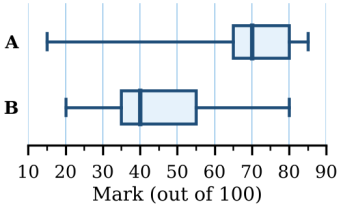
Day 296	S Tier 10-a-day
1 A flight leaves London at 06:20 (London time). It takes 9 hours 45 minutes. When it is 12:00 in London it is 20:00 in Tokyo. At what time, in Tokyo time, does the flight land? Say if it is on a different day.	
2 The 5th term of an arithmetic sequence is 31. The 8th term of the sequence is 43. (a) Find an expression for the nth term of the sequence. (b) Is 119 a term of the sequence? You must show your working.	
3 Q is 40% less than A. A is 15% more than C. Work out Q as a percentage of C.	
4 The diagram shows triangle ABC. (Calculator) Work out the length of AC. Give your answer correct to 1 decimal place. The diagram is not drawn accurately. 	
5 The ratio of blue to green sweets in a tin is 4 : 5. Then $\frac{2}{3}$ of the blue and $\frac{1}{2}$ of the green are taken out. Work out the ratio of blue to green now.	

Day 296 **S Tier 10-a-day**

6 (a) Show that the equation $x^3 - 4x - 6 = 0$ can be rearranged to give $x = \sqrt[3]{4x + 6}$ (Calculator)
(b) Use the iteration formula $x_{n+1} = \sqrt[3]{4x_n + 6}$ with $x_0 = 2$ to work out x_1 and x_2. Give each answer correct to 3 decimal places.

7 The box plots show the test marks of the students in two classes, A and B.
(a) Work out the interquartile range for each.
(b) Compare the distributions of A and B.



8 A circular arc has a chord AB of length 24 cm. The greatest distance between the chord and the arc is 4 cm.
Work out the radius of the circle.

9 Simplify fully $\frac{7^{k+2} - 7^k}{48}$

10 Prove that the product of $(6n - 1)$ and $(6n + 1)$ is always 1 less than a multiple of 36.