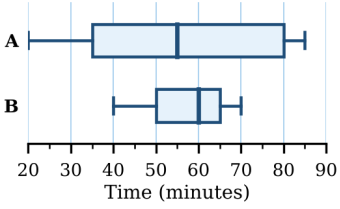
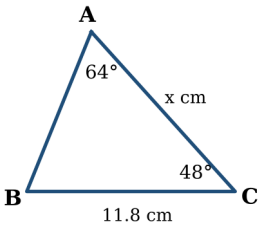
Day 233	IGCSE 10-a-day
1 $y = -5x^4 + x - \frac{5}{x}$ Find $\frac{dy}{dx}$.	
2 A car was bought for £7,100. Each year its value decreases by the same percentage. After 2 years it is worth £4,544. Work out the percentage decrease each year.	
3 $f(x) = 2x^2 - 16x + 7$ Use differentiation to find the coordinates of the turning point of the graph of $y = f(x)$. State whether it is a maximum or a minimum.	
4 n is an integer. How many values of n satisfy $2 \leq -2n + 1 < 21$	
5 The box plots show the times taken by two groups, A and B. (a) Work out the interquartile range for each. (b) Compare the distributions of A and B. 	

Day 233	IGCSE 10-a-day
6 $f(x) = -2x + 5$ and $g(x) = x^2 + 3$ (a) Find $gf(x)$. Give your answer in the form $ax^2 + bx + c$. (b) Solve $gf(x) = 228$	
7 Work out the length of AC. Give your answer correct to 3 significant figures. (Calculator)  	
8 OA = **a** and OB = **b**. OP = $-\mathbf{a} - \mathbf{b}$, OQ = $8\mathbf{a} - 13\mathbf{b}$ and OR = $11\mathbf{a} - 17\mathbf{b}$. (a) Show that P, Q and R lie on a straight line. (b) Work out the ratio PQ : QR in its simplest form.	
9 The curve $y = ax^2 + bx + 1$ has gradient -3 when $x = 0$ and gradient 5 when $x = 1$. Find the values of a and b.	
10 ABCD is a rectangle with AB = 10 cm and AD = 11 cm. A point P inside the rectangle is such that AP ≤ 10 cm and P is nearer to A than to B. Work out the area of the region in which P can lie. Give your answer in terms of π and surds.	