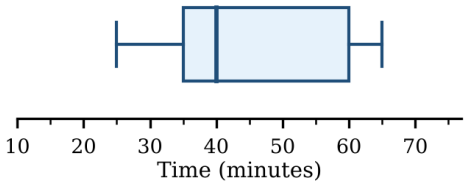
Day 282	A Level Maths: C Tier 10-a-day
1 The point P(−4, 2) lies on the curve y = f(x). Write down the coordinates of the image of P on (a) y = f(x − 1) (b) y = f(3x)	
2 Solve 2 ln x = 6. Give your answer to 3 significant figures.	
3 For 8 values, $\Sigma x = 136$ and $\Sigma x^2 = 2456$. Find the mean and the standard deviation.	
4 A curve has parametric equations $x = 4t + 2$, $y = 2t^2 - 5$. Find the coordinates of the point where $t = -3$.	
5 A train starts from rest and accelerates uniformly at 1 m s^{-2} for 4 s, then travels at constant speed for a further 15 s. Find the total distance travelled.	

Day 282 **A Level Maths: C Tier 10-a-day**

6 $\mathbf{a} = 2\mathbf{i} + 4\mathbf{j} + 2\mathbf{k}$ and $\mathbf{b} = 2\mathbf{i} - 3\mathbf{j} + 4\mathbf{k}$.
Find the angle between a and b, to 1 decimal place.

7 Car P passes a point O at constant speed 7 m s^{-1}.
At that instant car Q starts from rest at O with constant acceleration 2 m s^{-2} in the same direction. Find the time when Q catches up P.

8 The box plot summarises the delivery times, in minutes, of a pizza company.
Find the range and the interquartile range.



9 $\mathbf{a} = 5\mathbf{i} + 2\mathbf{j}$ and $\mathbf{b} = \frac{5}{2}\mathbf{i} + k\mathbf{j}$, where k is a constant.
Given that a and b are parallel, find the value of k.

10 The line $y = 2x + k$ is a tangent to the curve $y = x^2 + 6x + 5$.
Find the value of k.