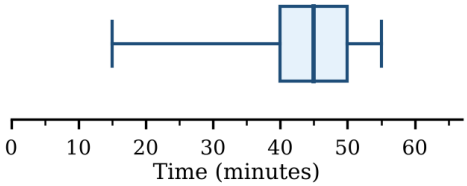
Day 153 **A Level Maths: C Tier 10-a-day**

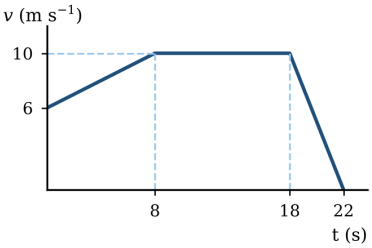
1 Find the coefficient of x^3 in the expansion of $(3 - x)^8$.

2 The box plot summarises the journey times, in minutes, of some commuters.
Find the range and the interquartile range.



3 Solve $6^{x+3} = 200$.
Give your answer to 3 significant figures.

4 The graph shows the velocity of a skater.
(a) Find the acceleration in the first 8 s.
(b) Find the deceleration in the last 4 s.
(c) Find the total distance travelled.



5 $f(x) = x^3 - x - 3$.
Use the Newton-Raphson method with $x_0 = 2$ to find x_1 and x_2,
giving your answer to 3 decimal places.

Day 153	A Level Maths: C Tier 10-a-day
6 Solve $-2x - 8 > -6$.	
7 Solve $\log x + \log (x - 2) = \log 8$, $x > 2$.	
8 Each customer buys a coffee with probability 0.3. Find the probability that at least one of 7 customers buys a coffee, to 3 s.f.	
9 A particle is thrown vertically upwards with speed 39.2 m s^{-1}. Take $g = 9.8$ m s^{-2}. (a) Find the time taken to reach its greatest height. (b) Find the greatest height reached.	
10 Expand $(1 + 3x)^{\frac{1}{2}}$ in ascending powers of x up to and including the term in x^2. State the range of values of x for which the expansion is valid.	