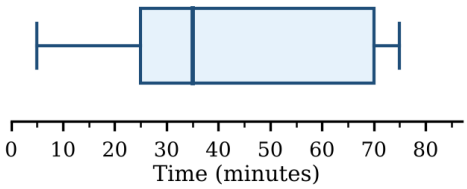
Day 47 **A Level Maths: C Tier 10-a-day**

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

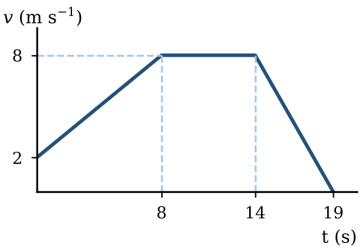


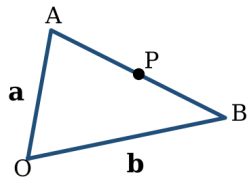
2 The table shows values of y = f(x).
x: 1 3 5 7 9
y: 7.7 4.2 3.9 1.8 6.3
Use the trapezium rule to estimate the area under the curve between x = 1 and x = 9.

3 Describe the single transformation that maps the graph of y = f(x) onto the graph of y = f(5x).

4 The volume of a sphere increases at 50 cm^3/s.
Find the rate of increase of the radius when r = 6. Give your answer to 3 s.f.

5 The graph shows the velocity of a runner.
(a) Find the acceleration in the first 8 s.
(b) Find the deceleration in the last 5 s.
(c) Find the total distance travelled.



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6 A circle has equation $(x - 2)^2 + y^2 = 25$. Determine whether the point P(8, 7) is inside, outside or on the circle.	
7 In the diagram, OA = **a**, OB = **b**, and P lies on AB with AP : PB = 1 : 1. Find AB and OP in terms of **a** and **b**. 	
8 A particle of mass 2 kg changes its speed from 5 m s^{-1} to 9 m s^{-1}. Find the increase in its kinetic energy.	
9 An interviewer outside a college must talk to 25 men and 25 women, and stops people until each target is met. Name the sampling method used.	
10 Find the range of values of k for which $kx^2 + 4x + 8 = 0$ has real roots.	