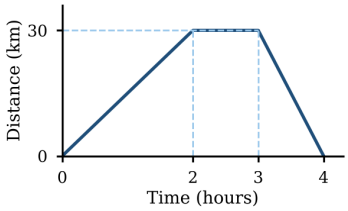
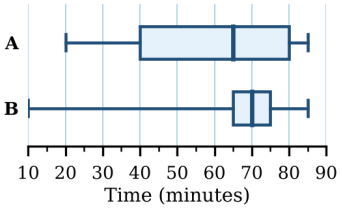
Day 125	S Tier 10-a-day
1 Work out the value of $(p - q)^2 - (p + q)^2$ when $p = -3$, $q = -4$ and $r = 4$.	
2 A sector of a circle has radius 4 cm. The length of the arc of the sector is π cm. (a) Work out the angle of the sector. (b) Work out the area of the sector. Give your answer to (b) in terms of π.	
3 The graph shows Leila's cycle ride to a café and back. (a) Work out Leila's speed on the way back. (b) Work out Leila's average speed for the whole ride, including the stop. 	
4 Evan puts £1,500 in a savings account. Compound interest is paid at 6% in year 1, 3% in year 2 and 5% in year 3. Work out the amount in the account at the end of year 3. Give your answer to the nearest penny. (Calculator)	
5 The point P(−6, −2) is reflected in the x-axis. The image is then rotated 90° clockwise about the origin. (a) Write down the coordinates of the final image of P. (b) Describe fully the single transformation that is equivalent to these two transformations.	

Day 125 **S Tier 10-a-day**

6 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.



7 In one country, income tax is worked out like this:
The first £12,500 of income is not taxed.
The next £35,000 is taxed at 20%.
All income above that is taxed at 45%.
Lena pays £15,325 in income tax in a year.
Work out Lena's income for the year.

8 P is directly proportional to the square of v and inversely proportional to the square of t.
When v = 6 and t = 3, P = 16.
Work out the value of P when v = 6 and t = 2.

9 A is the point (2, −3) and B is the point (0, 1).
Find an equation of the perpendicular bisector of AB.
Give your answer in the form y = mx + c.

10 The volume of a cube is 884 cm^3, correct to the nearest cm^3.
Work out the lower bound of the edge length of the cube.
Give your answer correct to 3 significant figures. (Calculator)