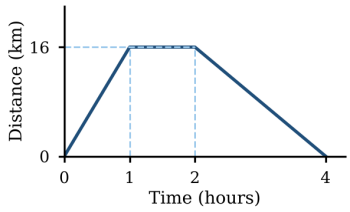
Day 357 **S Tier 10-a-day**

1 The table shows the number of students in each of four groups.
(a) A stratified sample of 23 is taken. Work out how many come from Year 9.
(b) A different stratified sample has 10 from Year 8. Work out the size of this sample.

	Year 7	Year 8	Year 9	Year 10
Number	400	250	150	350

2 Work out $(4\frac{3}{4} + 3\frac{1}{2}) \div 2\frac{5}{8}$
Give your answer as a mixed number or a fraction in its simplest form.

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 A sector of a circle has radius 4 cm and angle 150°.
(a) Work out the length of the arc of the sector.
(b) Work out the area of the sector. Give each answer in terms of π.

5 A bag contains 4 yellow cubes, 4 white cubes and 3 black cubes.
Two cubes are taken at random without replacement.
Work out the probability that (a) exactly one is yellow, (b) at least one is yellow.

Day 357	S Tier 10-a-day
6 Write $20^3 \times 12^2$ as a product of powers of prime numbers.	
7 Solve $5 \tan x° = 5$ for $0 \leq x \leq 360$	
8 Gareth invests £1,000 for 4 years at 3.5% per year simple interest. Amir invests £1,000 for 4 years at 3.5% per year compound interest. Work out how much more interest Amir earns than Gareth. Give your answer to the nearest penny. (Calculator)	
9 Solve $x - 11\sqrt{x} + 28 = 0$	
10 In the diagram, DE is parallel to BC. AD = x cm, DB = (x + 6) cm, DE = 3 cm and BC = 9 cm. (a) Find the value of x. (b) Work out the length of AB. The diagram is not drawn accurately. 