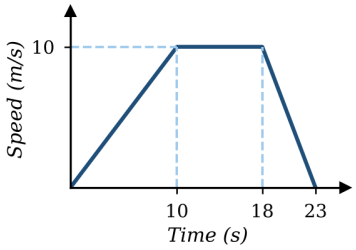
Day 39	IGCSE 10-a-day

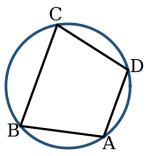
1 The curve $y = x^3 + 3x^2 + kx$ has a stationary point at $x = 1$.
(a) Find the value of k.
(b) Find the coordinates of the other stationary point.

2 Here are 7 numbers.
11, 21, 9, 54, 35, 54, 4
Find (a) the median (b) the interquartile range.

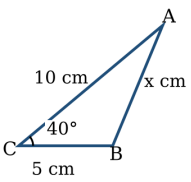
3 The graph shows the speed of a train between two stations.
(a) Work out the acceleration in the first 10 seconds.
(b) Work out the total distance.



4 A, B, C and D are points on a circle. Angle DAB = (3x + 15)°, angle BCD = (5x − 11)° and angle ABC = (2x + 15)°.
(a) Work out the value of x.
(b) Work out the size of angle ADC.
The diagram is not drawn accurately.



5 $y = x(x + 4)(3x − 2)$
Work out the gradient of the curve at the point where $x = −2$.

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6 A bag has 4 black and 5 red cubes. Three cubes are taken at random without replacement. (a) Work out the probability that all three are red. (b) Work out the probability that at least one is black.	
7 A bag contains 4 red counters and 3 blue counters. Two counters are taken at random without replacement. Work out the probability that (a) exactly one is red, (b) at least one is red.	
8 P is the point $(t, 3t^2)$ on the curve $y = 3x^2$, where $t \neq 0$. The normal to the curve at P meets the y-axis at the point Q. Show that the y coordinate of Q is $3t^2 + \frac{1}{6}$.	
9 The diagram shows triangle ABC. (Calculator) (a) Work out the length of AB, marked x, to 1 decimal place. (b) Work out the area of triangle ABC to 3 significant figures. The diagram is not drawn accurately. 	
10 The price of a car is increased by x%. The new price is then decreased by x%. The final price is 1% less than the original price. Work out the value of x.	