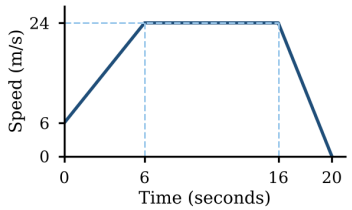
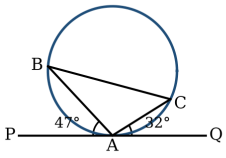
Day 262	S Tier 10-a-day
1 In triangle PQR, side QR is extended to S. Angle QPR = (4x − 10)° Angle PQR = (2x + 10)° Angle PRS = (5x + 17)° (a) Work out the value of x. (b) Work out the size of angle PRQ.	
2 Ravi cycles $\frac{8}{9}$ of a route before lunch. After lunch he cycles $\frac{1}{3}$ of the remaining distance. He still has 14 km to go. How long is the route, in km?	
3 Triangle T has vertices A(−4, 0), B(−2, −4), C(8, 4). T is enlarged with scale factor $\frac{3}{2}$ and centre (2, −2). (a) Write down the coordinates of the image of A. (b) The area of T is 18 square units. Work out the area of the image of T.	
4 (a) Write $x^2 + 12x + 31$ in the form $(x + p)^2 + q$ (b) Write down the coordinates of the turning point of the curve $y = x^2 + 12x + 31$	
5 The graph shows the speed of a train during 20 seconds. (a) Work out the acceleration during the first 6 seconds. (b) Work out the average speed over the whole 20 seconds. 	

Day 262 **S Tier 10-a-day**

6 A retailer buys a watch for £340.
It adds a 20% mark-up to get the selling price.
In a sale the selling price is reduced by 25%.
Work out the percentage profit or loss on the original cost.

7 PAQ is a tangent to the circle at A. B and C are points on the circle. Angle PAB = 47° and angle CAQ = 32°.
(a) Work out the size of angle ABC.
(b) Work out the size of angle ACB.
The diagram is not drawn accurately.



8 A circle has centre C(−3, −4) and passes through the point P(−6, 5).
Find an equation of the circle.

9 The table shows the daily visitors over six periods.
The 3-point moving average centred on Thu is 29.
(a) Work out the value of x.
(b) Work out the 3-point moving average centred on Fri.

	Mon	Tue	Wed	Thu	Fri	Sat
Value	16	34	23	x	36	23

10 Work out the value of $\frac{2x - y}{z}$
when x = 1, y = 2 and z = 2.