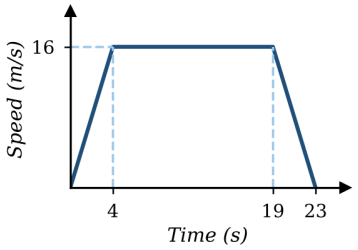
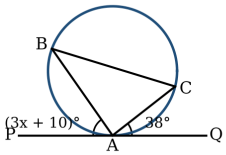
Day 70	S Tier 10-a-day
1 Write these numbers in order of size, starting with the smallest. $\frac{1}{4}$, $\frac{8}{9}$, $\frac{3}{8}$, 0.78	
2 The graph shows the speed of a train between two stations. (a) Work out the acceleration in the first 4 seconds. (b) Work out the total distance. 	
3 A circular arc has a chord AB of length 36 cm. The greatest distance between the chord and the arc is 6 cm. Work out the radius of the circle.	
4 A bath is $\frac{3}{4}$ full. 10 more litres of water are added and the bath is then $\frac{4}{5}$ full. Work out the capacity of the bath.	
5 A tank is filled by a tap in 15 minutes. A drain can empty the full tank in 30 minutes. The tap and the drain are both open, and the tank is empty to begin with. How long does it take for the tank to fill?	

Day 70	S Tier 10-a-day

6 PAQ is a tangent to the circle at A. B and C are points on the circle. Angle PAB = (3x + 10)°, angle ACB = (2x + 25)° and angle CAQ = 38°.
(a) Work out the value of x.
(b) Work out the size of angle BAC.
The diagram is not drawn accurately.



7 A shop mixes two types of tea.
Type A costs £6.00 per kg and type B costs £14.00 per kg.
They are mixed in the ratio A : B = 3 : 5.
The mixture is sold for £13.75 per kg.
Work out the percentage profit.

8 A circle has equation $x^2 + y^2 = 130$.
The point P(−9, 7) lies on the circle.
Find an equation of the tangent to the circle at P.
Give your answer in the form ax + by = c, where a, b and c are integers.

9 $N = 2^4 \times 3^2 \times 7^2$
How many factors does N have?
Include 1 and N.

10 A bag contains some sweets. 3 of them are red and the rest are yellow.
Two sweets are taken at random without replacement.
The probability that both are red is $\frac{1}{7}$.
Work out how many sweets are yellow.