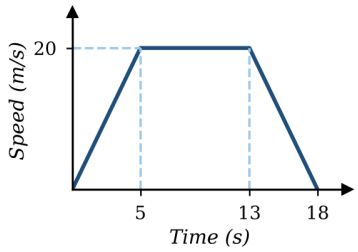
Day 195	S Tier 10-a-day

1 Rhys invests £8,000. The rates of interest for the next 3 years are 4%, 6% and 6%.
Compound interest is paid. Work out the value of the investment after 3 years.
Give your answer to the nearest penny.
(Calculator)

2 The graph shows the speed of a train between two stations.
(a) Work out the acceleration in the first 5 seconds.
(b) Work out the total distance.



3 A wooden block in the shape of a cuboid weighs 600 N.
Its smallest face has area 400 cm^2. Its largest face has area 800 cm^2.
Pressure = force ÷ area
Work out (a) the greatest pressure and (b) the least pressure the wooden block can exert on the ground, in N/m^2.

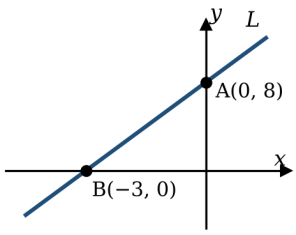
4 A bag contains counters.
$\frac{3}{8}$ of the counters are red and $\frac{1}{3}$ of the counters are blue.
The rest of the counters, 21 of them, are green.
How many blue counters are there?

5 Solve $2 \sin x = 1$ for $0° \leq x \leq 360°$.
Do not use a calculator.

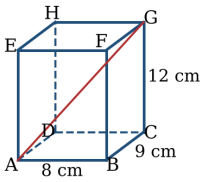
Day 195 **S Tier 10-a-day**

6 The side length of a square is decreased by 50%.
Work out the percentage change in the area of the square.

7 The diagram shows the straight line L, which passes through the points A and B.
The line M is perpendicular to L and passes through B.
Find the equation of M in the form $y = mx + c$.



8 The diagram shows a cuboid ABCDEFGH.
(Calculator)
(a) Work out the length of the diagonal AG.
(b) Work out the angle between AG and the base ABCD, to 1 decimal place.
The diagram is not drawn accurately.



9 Show that the line $y = x - 2$ is a tangent to the circle $x^2 + y^2 = 2$.
Find the coordinates of the point where the line touches the circle.

10 Ivan invests £12,000 for 4 years at 1.5% per year simple interest.
Priya invests £12,000 for 4 years at 1.5% per year compound interest.
Work out how much more interest Priya earns than Ivan.
Give your answer to the nearest penny.
(Calculator)