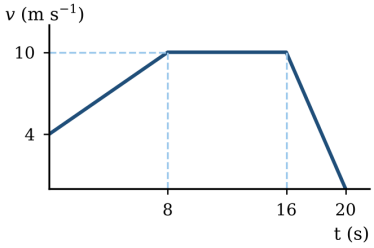
Day 295	A Level Maths: C Tier 10-a-day
1 Find the exact value, in radians, of (a) $\arcsin(-1)$ (b) $\arctan(1)$	
2 A line has parametric equations $x = 4t - 2$, $y = 4t - 4$. Find its equation in the form $y = mx + c$.	
3 The journey times in minutes for two groups: Route A has mean 68, standard deviation 14; Route B has mean 71, standard deviation 9. Compare the two sets of data.	
4 Solve $\tan x = -\frac{\sqrt{3}}{3}$ for $0 \leq x \leq 2\pi$. Give your answers in terms of π.	
5 A light plank rests on a pivot. A child of mass 30 kg sits 3 m from the pivot on one side. Where must a child of mass 25 kg sit on the other side for the plank to balance horizontally?	

Day 295 **A Level Maths: C Tier 10-a-day**

6 The discrete random variable X has this distribution.
x: 0, 1, 3, 5
P(X = x): 0.2, 0.2, 0.5, 0.1
Find E(X) and Var(X).

7 Solve $x^{\frac{5}{2}} = 1024$.

8 The graph shows the velocity of a car.
(a) Find the acceleration in the first 8 s.
(b) Find the deceleration in the last 4 s.
(c) Find the total distance travelled.



9 A circle has equation $(x - 4)^2 + (y + 3)^2 = 25$.
Write down the centre and the radius of the circle.

10 $x_{n+1} = (3x_n + 10)^{\frac{1}{3}}$, with $x_0 = 2$.
Find x_1, x_2 and x_3 to 3 decimal places.