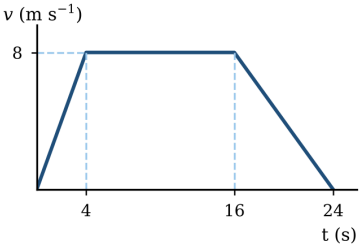
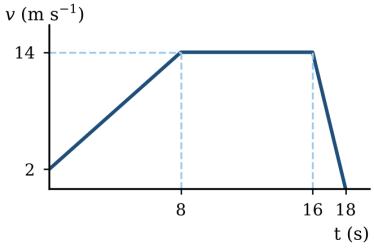
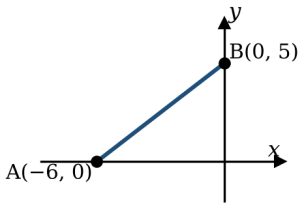
Day 101	A Level Maths: C Tier 10-a-day
1 A model relates the temperature, T °C, of a cooling drink to the time, t minutes, since pouring by $T = 71 - 3t$. Interpret the value 3 in this context.	
2 The volume of a sphere increases at 24 cm^3/s. Find the rate of increase of the radius when r = 4. Give your answer to 3 s.f.	
3 A reporter asks the first 10 people who walk out of a town for their views. Name the sampling method used.	
4 The graph shows the velocity of a cyclist over 24 seconds as it moves in a straight line. (a) Find its acceleration in the first 4 s. (b) Find the total distance travelled. 	
5 Sketch $y = \frac{-4}{x+3} + 3$. Write down the equations of the asymptotes and the coordinates where the curve meets the axes.	

Day 101 **A Level Maths: C Tier 10-a-day**

6 The graph shows the velocity of a car.
(a) Find the acceleration in the first 8 s.
(b) Find the deceleration in the last 2 s.
(c) Find the total distance travelled.



7 The diagram shows a line meeting the axes at A and B.
Find (a) the equation of AB in the form px + qy = r with integers p, q and r, (b) the length AB.



8 f(x) = 7 sin x + 24 cos x + 2.
Write f(x) in the form R sin(x + α) + 2, with α in degrees to 1 d.p., and state the maximum value of f(x).

9 Divide $f(x) = x^3 + 7x^2 + 14x + 8$ by (x + 4).
Find the quotient and the remainder.

10 A sector has radius 15 cm and angle $\frac{\pi}{3}$ radians.
Find the arc length, leaving π in your answer, and the perimeter.