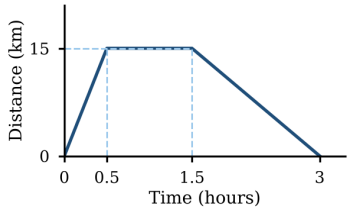
Day 196 **IGCSE 10-a-day**

1 A curve has equation $y = x^2 - 4x - 3$.
Find the equation of the tangent to the curve at the point where $x = 0$.

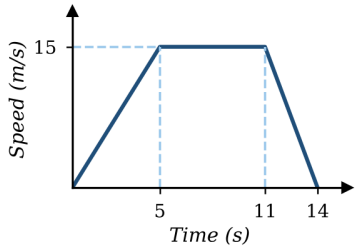
2 The graph shows Tariq's cycle ride to a café and back.
(a) Work out Tariq's speed on the way back.
(b) Work out Tariq's average speed for the whole ride, including the stop.



3 $y = \dfrac{x^4 - 2x + 3}{x^3}$

Find $\dfrac{dy}{dx}$.

4 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.



5 Dina, Leila and Sofia share some sweets.
Dina : Leila = 4 : 9
Leila : Sofia = 7 : 6
(a) Work out the ratio Dina : Leila : Sofia.
(b) Leila gets 105 sweets more than Dina. How many sweets does Sofia get?

Day 196	IGCSE 10-a-day
6 Solve $2^{x+2} = 16^0$	
7 A = (−1, 1), B = (−6, −4) and C = (4, −4). Show that triangle ABC is isosceles and right-angled.	
8 The curve $y = -2x^3 + 6x^2 + k$, where k is a constant, has the x-axis as a tangent. Find the two possible values of k.	
9 $f(x) = \sqrt{x+5} - 2$. (a) State the largest possible domain of f. (b) State the range of f for this domain.	
10 In the diagram, DE is parallel to BC. AD = 4 cm, DB = 10 cm and the area of triangle ADE is 36 cm^2. Work out the area of the trapezium DBCE. The diagram is not drawn accurately. 