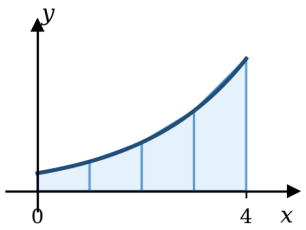
Day 362	A Level Maths: C Tier 10-a-day
1 Find the sum of the first 7 terms of the geometric series 3 + 9 + 27 + ...	
2 A car decelerates uniformly from 12 m s^{-1} to rest in 8 s. Find (a) the deceleration, (b) the distance travelled while decelerating.	
3 Evaluate $32^{\frac{2}{5}}$.	
4 A has coordinates (1, 5, 3) and B has coordinates (7, 7, 0). Find (a) the vector AB, (b) the distance AB, (c) the midpoint of AB.	
5 The mean of 10 times (seconds) of the Class A is 45. The mean of 30 times (seconds) of the Class B is 55. Find the mean of all 40 values.	

Day 362	A Level Maths: C Tier 10-a-day
6 A car of mass 1200 kg tows a caravan of mass 500 kg on a level road with acceleration 1 m s^{-2}. Resistances: 200 N on the car, 100 N on the caravan. Find the driving force and the tow bar tension.	
7 Use proof by exhaustion to show that $n^2 + n + 4$ is divisible by 2 for every integer n with $1 \leq n \leq 4$.	
8 The diagram shows the curve $y = e^{\frac{x}{2}}$ from x = 0 to x = 4 divided into 4 strips of equal width. Use the trapezium rule with these strips to estimate the shaded area to 3 s.f. 	
9 X ~ B(15, p). H_0: p = 0.3, H_1: p < 0.3. Find the critical region for a test at the 10% significance level.	
10 A curve has equation $3x^2 + 3y^2 = 15$. Find dy/dx in terms of x and y, and hence the gradient at (2, 1).	