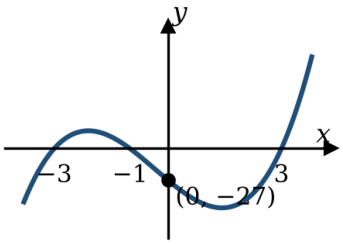
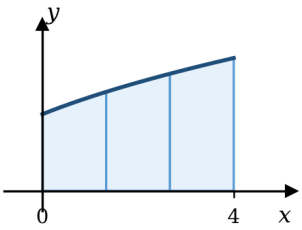
Day 168	A Level Maths: C Tier 10-a-day
1 In an exam question, a car is modelled as a particle. State what this assumption means for the motion or forces in the model.	
2 Simplify $3 \sin x \cos x \div \cos x$.	
3 $X \sim B(60, 0.2)$. Use a normal approximation to find $P(X \geq 9)$, to 3 s.f.	
4 Evaluate $\sum_{k=1}^{4} 2 \times 3^{k-1}$.	
5 X is the number of faulty bulbs in a random sample of 11 from a very large batch, 4% being faulty. Can X be modelled by a binomial distribution? Give a reason.	

Day 168 **A Level Maths: C Tier 10-a-day**

6 The diagram shows the curve y = f(x), where f(x) is a cubic. Find f(x) in the form k(x − a)(x − b)(x − c).



7 The diagram shows the curve $y = \sqrt{x + 2}$ from x = 0 to x = 4 divided into 3 strips of equal width. Use the trapezium rule with these strips to estimate the shaded area to 3 s.f.



8 $f(x) = (x - 3)^2 - 3$, $x \geq 0$.
Find the range of f.

9 Solve $\sin 3x = \frac{1}{2}$ for $0° \leq x \leq 120°$.

10 A boat travels 36 m at a constant speed of 6 m s^{-1}, then a further 100 m at a constant speed of 10 m s^{-1}. Find the average speed for the whole journey.