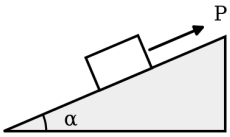
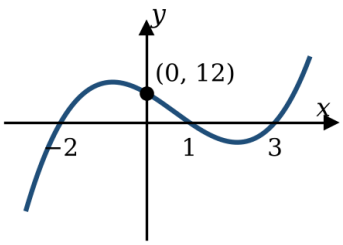
Day 146	A Level Maths: C Tier 10-a-day
1 Divide $f(x) = x^4 + 5x^3 + 2x^2 - x - 6$ by $(x + 1)$. Find the quotient and the remainder.	
2 A particle of mass 26 kg rests on a smooth plane inclined at α to the horizontal, where $\tan \alpha = \frac{5}{12}$. It is held by a force P N up the slope. Take $g = 9.8$ m s^{-2}. Find P and the normal reaction. 	
3 θ is acute and $\sin \theta = \frac{5}{13}$. Find the exact values of $\cos \theta$ and $\tan \theta$.	
4 A is $(-2, 5)$ and B is $(4, 5)$. AB is a diameter of a circle. Find the equation of the circle.	
5 A car of mass 800 kg tows a caravan of mass 500 kg on a level road with acceleration 0.5 m s^{-2}. Resistances: 300 N on the car, 100 N on the caravan. Find the driving force and the tow bar tension.	

Day 146	A Level Maths: C Tier 10-a-day
6 Each time a spinner is spun the probability of red is 0.25. Find the probability of getting red at least once in 9 spins, to 3 s.f.	
7 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). 	
8 The curve $y = 5x - x^2$ and the line y = 2x meet at the origin and at P. Find the area enclosed between them.	
9 X ~ B(18, 0.2). Find P(X = 6), giving your answer to 3 s.f.	
10 Differentiate y = sec 4x with respect to x.	