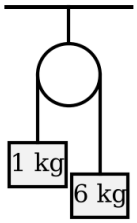
Day 147	A Level Maths: C Tier 10-a-day
1 A bag has 5 red and 2 blue sweets. Two are taken at random without replacement. Find the probability that they are both the same colour.	
2 In a geometric sequence $u_3 = 24$ and $u_4 = 48$. Find the first term and the common ratio.	
3 Write $2 \log 2 + \log 3 - \log 2$ as a single logarithm, giving it in the form log N where N is an integer.	
4 A car of mass 1500 kg tows a caravan of mass 500 kg on a level road with acceleration 0.75 m s^{-2}. Resistances: 400 N on the car, 100 N on the caravan. Find the driving force and the tow bar tension.	
5 $f(x) = 6x + 4$. Find $f^{-1}(x)$.	

Day 147	A Level Maths: C Tier 10-a-day
6 Express 7 sin x + 24 cos x in the form R sin(x + α), where R > 0 and 0° < α < 90°. Give α to 1 decimal place.	
7 (x + 1) is a factor of $x^3 + kx^2 - 3x - 6$. Find the value of k.	
8 Two particles of masses 1 kg and 6 kg hang from the ends of a light inextensible string over a smooth pulley and are released from rest. Take g = 9.8 m s^{-2}. Find the acceleration and the tension in the string. 	
9 X ~ B(10, p). H_0: p = 0.4, H_1: p < 0.4. Find the critical region for a test at the 5% significance level.	
10 Solve $-3\cos^2 x + 3\sin x + 3 = 0$ for $0° \leq x \leq 360°$.	