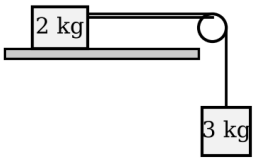
Day 177	A Level Maths: C Tier 10-a-day
1 Classify each variable as qualitative, discrete or continuous. (a) the type of transport used to get to school (b) a person's favourite colour (c) the number of texts sent in a day	
2 Solve $(2 \cos x - 1)(\cos x + 1) = 0$ for $0° \leq x \leq 360°$.	
3 Solve $5 \leq 3x + 2 \leq 14$.	
4 A lorry travelling at 15 m s^{-1} brakes uniformly and comes to rest after travelling 30 m. (a) Find the deceleration. (b) Find the time taken to stop.	
5 Use the product rule to differentiate $y = x^1 \cos 2x$.	

Day 177 **A Level Maths: C Tier 10-a-day**

6 In a geometric sequence $u_3 = 216$ and $u_4 = 324$.
Find the first term and the common ratio.

7 A 2 kg particle on a smooth horizontal table is joined by a light string over a smooth pulley to a hanging 3 kg particle, as shown. The system is released from rest. Take $g = 9.8$ m s^{-2}. Find the tension.



8 Solve $x^2 - 2x - 5 = 0$, giving your answers in the form $p \pm \sqrt{q}$.

9 A player says that she wins a game with probability 0.75.
A researcher thinks that the probability is different. Let p be the probability that she wins a game.
Write down suitable hypotheses for a test on p.

10 $\frac{2x + 3}{(x + 1)(x + 2)} \equiv \frac{A}{x + 1} + \frac{B}{x + 2}$.
Find A and B, and hence find $\int \frac{2x + 3}{(x + 1)(x + 2)}\, dx$.