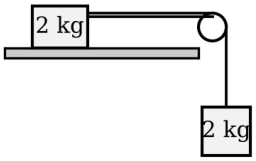
Day 104	A Level Maths: C Tier 10-a-day
1 The journey times in minutes for two groups: Route A has mean 50, standard deviation 11; Route B has mean 77, standard deviation 9. Compare the two sets of data.	
2 A curve has parametric equations $x = t - 4$, $y = 3t^2 - 6$. Find the coordinates of the point where $t = 3$.	
3 Solve (a) $e^x = 12$ (b) $\ln x = 1$ Give answers to 3 significant figures.	
4 A car moving in a straight line increases its speed from 1 m s^{-1} to 17 m s^{-1} with constant acceleration 4 m s^{-2}. Find the time taken.	
5 Solve $x + 4 < 12$.	

Day 104 **A Level Maths: C Tier 10-a-day**

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



7 (a) Show that $x^3 - 3x - 9 = 0$ can be rearranged to $x = (3x + 9)^{\frac{1}{3}}$.
(b) Use x_{n+1} = this formula with $x_0 = 2$ to find x_1, x_2 to 3 d.p.

8 $f(x) = \frac{1}{x+1} + 2$, $x \neq -1$.
Find the range of f.

9 X has probability density function $f(x) = \frac{1}{9}x^2$ for $0 \leq x \leq 3$, and 0 otherwise.
Find E(X).

10 Solve $\cos x = \frac{\sqrt{2}}{2}$ for $0 \leq x \leq 2\pi$.
Give your answers in terms of π.