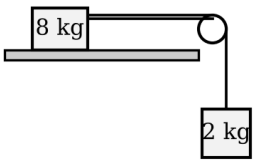
Day 78	A Level Maths: C Tier 10-a-day
1 A circle has equation $(x - 2)^2 + (y - 1)^2 = 4$. Write down the centre and the radius of the circle.	
2 The table summarises the number of goals scored in a game by 50 people. Goals, x: 1, 2, 3, 4, 5 Frequency, f: 21, 4, 6, 8, 11 Find the mean.	
3 A 8 kg particle 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. 	
4 Solve $\ln(x + 6) - \ln x = \ln 4$.	
5 Two forces $(-5\mathbf{j})$ N and $(12\mathbf{i} + 9\mathbf{j})$ N act on a particle of mass 4 kg. No other horizontal forces act. Find the acceleration of the particle as a vector in terms of $\mathbf{i}$ and $\mathbf{j}$.	

Day 78	A Level Maths: C Tier 10-a-day
6 Find the equation of the normal to the curve $y = 3x^3 - 4x^2 - 5$ at the point where $x = 3$.	
7 $X \sim B(20, p)$. H_0: $p = 0.6$, H_1: $p < 0.6$. Find the critical region for a test at the 5% significance level.	
8 The line $y = -4x + k$ is a tangent to the curve $y = x^2 - 8x - 3$. Find the value of k.	
9 Use the substitution $u = x^2 + 4$ to find $\int \frac{2x}{x^2 + 4}\, dx$.	
10 A curve has parametric equations $x = 4t - 5$, $y = t^2 + 1$. The point P has y-coordinate 5 and positive t. Find the coordinates of P.	