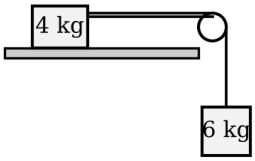
Day 89	A Level Maths: C Tier 10-a-day
1 A researcher wants to find out the opinions of the staff at a company. Give one advantage and one disadvantage of using quota sampling.	
2 Find an equation of the line through A(−1, −5) and B(2, 2), in the form ax + by + c = 0, where a, b and c are integers.	
3 A sector has radius 4 cm and arc length 4.80 cm. Find the angle of the sector in radians and the area of the sector.	
4 A particle has initial velocity $(3\mathbf{i} - 4\mathbf{j})$ m s^{-1} and constant acceleration $(3\mathbf{i} - \mathbf{j})$ m s^{-2}. Find its velocity after 3 s.	
5 $f(x) = (x - 1)^2 + 4$, $x \geq 0$. Find the range of f.	

Day 89 **A Level Maths: C Tier 10-a-day**

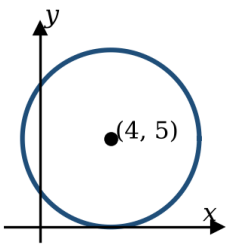
6 A 4 kg particle on a smooth horizontal table is joined by a light string over a smooth pulley to a hanging 6 kg particle, as shown. The system is released from rest. Take g = 9.8 m s^{-2}. Find the tension.



7 The curve $y = 9x - x^2$ and the line $y = 3x$ meet at the origin and at P.
Find the area enclosed between them.

8 In a histogram, the class 0 to 5 has frequency 15 and is drawn with a bar of height 3 cm.
The class 5 to 15 has frequency 50. Find the height of its bar.

9 The diagram shows a circle with the centre marked.
The circle touches the x-axis. Find the equation of the circle.



10 Solve $-4\cos^2 x + 2\sin x + 2 = 0$
for $0° \leq x \leq 360°$.