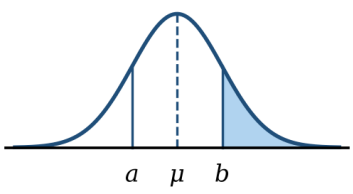
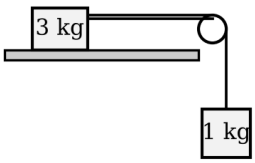
Day 110	A Level Maths: C Tier 10-a-day
1 Find the first four terms, in ascending powers of x, of the expansion of $(1 - x)^7$.	
2 In a mechanics model, a plank is described as rigid. State what this assumption means for the motion or forces in the model.	
3 Classify each variable as qualitative, discrete or continuous. (a) the number of texts sent in a day (b) the type of transport used to get to school (c) the number of cars in a car park	
4 Solve cos x = 0.45 for $0° \leq x \leq 360°$. Give your answers to 1 decimal place.	
5 The diagram shows the density of $X \sim N(90, 4^2)$. a and b are equal distances from the mean. The shaded area, P(X > b), is 0.31. Find P(a < X < b). 	

Day 110	A Level Maths: C Tier 10-a-day
6 When $x^3 + kx^2 - 3x + 2$ is divided by $(x + 1)$, the remainder is -1. Find the value of k.	
7 A curve has equation $xy = 3$. Find dy/dx in terms of x and y, and hence the gradient at (3, 1).	
8 A 3 kg particle on a smooth horizontal table is joined by a light string over a smooth pulley to a hanging 1 kg particle, as shown. The system is released from rest. Take $g = 9.8$ m s^{-2}. Find the tension. 	
9 $f(x) = 6 \sin x + 8 \cos x + 1$. Write f(x) in the form $R \sin(x + \alpha) + 1$, with α in degrees to 1 d.p., and state the maximum value of f(x).	
10 Solve $15 \leq 3x + 3 \leq 33$.	