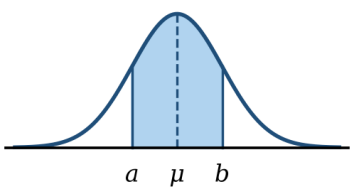
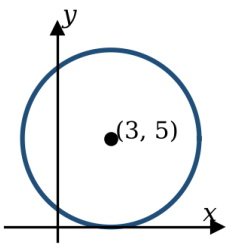
Day 223	A Level Maths: C Tier 10-a-day
1 M(−3, 1) is the midpoint of the line segment AB. A is the point (−1, 3). Find the coordinates of B.	
2 A particle of mass 2 kg hangs from a light string and is raised vertically with acceleration 1 m s^{-2}. Taking g = 9.8 m s^{-2}, find the tension.	
3 Sam says that $n^2 + 3n + 13$ is prime for every positive integer n. Show that Sam is wrong.	
4 Solve $2^x = 20$. Give your answer to 3 significant figures.	
5 The diagram shows the density of X ~ N(40, 4^2). a and b are equal distances from the mean. The shaded area is 0.74. Find P(X > b). 	

Day 223 **A Level Maths: C Tier 10-a-day**

6 θ is small and measured in radians.
Use the small angle approximations to find an approximation for $\frac{\sin 4\theta}{\tan \theta}$.

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



8 A particle moves with constant velocity $(2\mathbf{i} + 5\mathbf{j})$ m s^{-1}. It is at the point with position vector $(3\mathbf{i} + 4\mathbf{j})$ m at t = 0. Find the time when its position vector is $(9\mathbf{i} + 19\mathbf{j})$ m.

9 Solve $\log_5 (5x + 4) = 2$.

10 In a histogram, the class 20 to 25 has frequency 40 and is drawn with a bar of height 4 cm.
The class 25 to 35 has frequency 20. Find the height of its bar.