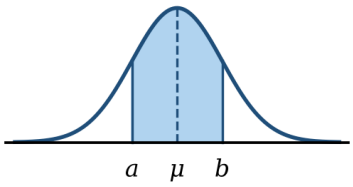
Day 232 **A Level Maths: C Tier 10-a-day**

1 A is $(-5, 0)$ and B is $(5, 10)$. AB is a diameter of a circle.
Find the equation of the circle.

2 The diagram shows the density of $X \sim N(35, 2^2)$.
a and b are equal distances from the mean.
The shaded area is 0.78.
Find $P(X > b)$.



3 Find the equation of the tangent to the curve $y = 3 \ln x + x$ at the point where $x = 1$.

4 A crate of mass 15 kg is pulled along rough horizontal ground at constant speed by a horizontal force of 88.2 N. Take $g = 9.8$ m s^{-2}.
Find the coefficient of friction between the crate and ground.

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

Day 232	A Level Maths: C Tier 10-a-day
6 The continuous random variable X has probability density function f(x) = k(x + 2) for 0 ≤ x ≤ 4, and 0 otherwise. Find the value of k.	
7 Given that dy/dx = 3y and y = 5 when x = 0, find y in terms of x.	
8 Solve |x + 2| = |x − 2|.	
9 A particle P moves in a straight line. Its displacement from O at time t seconds is s metres, where $s = 3t^3 + 5t^2 + t + 2$. Find its velocity when t = 1.	
10 Solve x + 2 ≥ 24.	