9 The gradient of a curve is given by $\frac{dy}{dx} = e^x - 4e^{-x}$.

(a) Show that the x-coordinate of any point on the curve at which the gradient is 3 satisfies the equation $(e^x)^2 - 3e^x - 4 = 0$. **[2]**

(b) Hence show that there is only one point on the curve at which the gradient is 3, stating the exact value of its x-coordinate. **[3]**

(c) The curve passes through the point $(0, 0)$.

Show that when $x = 1$ the curve is below the x-axis. **[5]**