6. [11 points] Consider the curve $C$ defined by

$$e^{xy} = 4x - y^2 + 2.$$

a. [6 points] For this curve $C$, find a formula for $\frac{dy}{dx}$ in terms of $x$ and $y$.
Remember to show your work clearly.

Answer: $\frac{dy}{dx} = \frac{\text{expression}}{\text{expression}}$

b. [2 points] Exactly one of the points below lies on the curve $C$. Circle that one point.

(2, 0) (1, −2) (1, 1) (0, −1)

c. [3 points] Find an equation for the tangent line to the curve $C$ at the point you chose in part (b).

Answer: $y = \text{expression}$