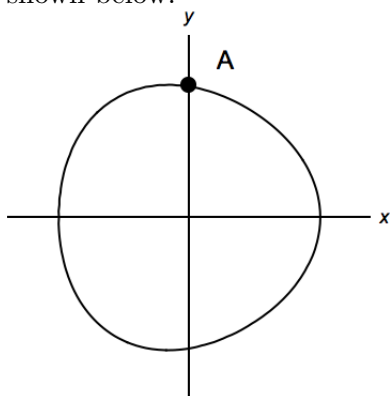**8.** [11 points] Let $\mathcal{C}$ be the curve given by the equation $81 - (x^2 + y^2)^2 = 2xy^2$. The graph of $\mathcal{C}$ is shown below.

a. [2 points] Find the coordinates (x, y) of the point A.

$A = $ _____

b. [6 points] Find $\dfrac{dy}{dx}$. Show all your computations step by step.

$$\frac{dy}{dx} = \underline{\hspace{10cm}}$$

c. [3 points] Find an equation of the tangent line $L(x)$ to the graph of $\mathcal{C}$ at A. Show all your work.

$L(x) = $ _____