

**AP Calculus Free-Response Question
NON-Calculator**

Consider the curve given by $xy^2 - x^3y = 6$.

a) Show that $\frac{dy}{dx} = \frac{3x^2y - y^2}{2xy - x^3}$

b) Find all points on the curve whose x-coordinate is 1, and write an equation for the tangent line at each of these points.

c) Find the x-coordinate of each point on the curve where the tangent line is vertical.

a)

b)

c)
