1.) Find the derivative \( \frac{dy}{dx} = y' \) for each of the following. You need not simplify your answers.

   a.) \( xy^3 + x^2y = x - y \)

   b.) \( y^2 (x + y)^3 = x^2 \)

   c.) \( \sin(3x + 2y) = \tan(x^3) \)

   d.) \( y \sec(y^2 + 1) = \cos(x + y) \)

   e.) \( (x - \csc(3y))^5 = 7 + y \)

2. Find the slope of the line which is tangent to the graph of \( xy + x^2 + y^3 = 8 \) at \( x = 0 \).

3. Find the concavity of the graph \( x^2y + y^3 = x + 1 \) at \( x = 0 \).