Exercise 1 (5 points) Find \( \frac{dy}{dx} \) if \( xy^2 - x^2 y = e^{xy} \)

Exercise 2 (5 points) A particle is moving along the curve \( y = x^2 \). If the X-coordinate is increasing at a rate of \( \sqrt{2} \) feet/s, how fast is the angle between the particle and X-axis is changing when \( x = 1 \).
Exercise 1 (5 points) Find \( \frac{dy}{dx} \) if \( xy^2 - x^2 y = \sin(xy) \)

Exercise 2 (5 points) A particle is moving along the curve \( y = x^2 \). If the X-coordinate is increasing at a rate of \( 2\sqrt{2} \) feet/s, how fast is the angle between the particle and X-axis is changing when \( x = 1 \).
Exercise 1 (5 points) A particle is moving along the curve $y = x^2$. If the X-coordinate is increasing at a rate of $3\sqrt{2}$ feet/s, how fast is the angle between the particle and X-axis is changing when $x = 1$. 