1. Find the derivative for each of the following

(a) \( y = 3t^5 - 5\sqrt{t} + \frac{7}{t} \)

(b) \( y = \sqrt{x}(x + 1) \)

2. Find the equation to the tangent line to the graph of \( f(x) = 2x^3 - 5x^2 + 3x - 5 \) at \( x = 1 \).

3. The demand for a product is given, for \( p, q \geq 0 \), by \( p = f(q) = 50 - 0.03q^2 \).

(a) Find the \( p \)– and \( q \)– \textit{intercepts} for this function and interpret them in terms of demand for this product.

(b) Find \( f(20) \) and give units with your answer. Explain what it tells you in terms of demand.

(c) Find \( f'(20) \) and give units with your answer. Explain what it tells you in terms of demand.