1. Suppose the demand for a certain product is described by

\[ p(x) = \frac{500}{\sqrt{x^3}} \]

where \( x \) is the production level and \( p \) is the price at which one will sell this many items. Find the marginal demand \( dp/dx \) and the marginal revenue \( dR/dx \) at production level \( x = 60 \). (Recall that \( R = x \cdot p(x) \)).

2. Write out the approximation formula \( \Delta f \approx f(x_0) + f'(x_0) \cdot (x - x_0) \) for \( f(x) = 1 - x^2 \) at \( x_0 = 2 \). Estimate the value of \( \Delta f \) for \( \Delta x = +0.1 \).