1. Find the derivative of $y = \log_6(x^3 + 8)$.

$$y' = \frac{3x^2}{(x^3 + 8)\ln(6)}$$

2. The price demand function for a product is given by $x = 2500 - p^3$. Find the elasticity when the price is \$11.

$$E(p) = -p * \frac{-3p^2}{2500 - p^3} = \frac{3p^3}{2500 - p^3}$$

$$E(11) = \frac{3(11)^3}{2500 - (11)^3} = 3.4157$$

3. An item is priced at \$5 and at this price $E(5) = 1.3$. If the price is changed by 8%, what is the approximate percent change in demand.

$$8\% * 1.3 = 10.4\%$$

Demand will have a percent change of approximately 10.4%