

1. Find the derivative of $y = \log_8(x^7 + 2)$.

$$y' = \frac{7x^6}{(x^7 + 2) \ln(8)}$$

2. The price demand function for a product is given by $x = 1400 - p^3$. Find the elasticity when the price is \$8 .

$$E(p) = -p * \frac{-3p^2}{1400 - p^3} = \frac{3p^3}{1400 - p^3}$$

$$E(8) = \frac{3(8)^3}{1400 - (8)^3} = 0.1.729$$

3. An item is priced at \$2 and at this price $E(2) = 0.35$. If the price is changed by 12%, what is the approximate percent change in demand.

$$12\% * 0.35 = 4.2\%$$

Demand will have a percent change of approximately 4.2%