**1.** Determine the partial derivatives with respect to all of the variables in the following functions:

1. 



1. 
2. A company hires you as the marketing consultant to estimate the demand function for its product. You have concluded the demand function is



Where *Q* is the quantity demanded per capita per month, *P* is the product’s price (in dollars).

1. What is the price elasticity of demand?
2. Suppose you propose the selling price to be $200, what will be the associated marginal revenue?