

You must show all your work to receive credit.

1.] (2 pts) At the price $p = 5$, determine if $D(p)$ (specified below) is elastic, inelastic, or is of unit elasticity. You may use the formula for $E(p)$ given below:

$$E(p) = \frac{p}{q} \cdot \frac{dq}{dp}$$

$$D(p) = \frac{5000}{p} - 100$$

$$D'(p) = -\frac{5000}{p^2}$$

$$D'(5) = -\frac{5000}{5^2}$$

$$= -\frac{5000}{25} = -200.$$

$$q = D(p)$$

$$\frac{dq}{dp} = D'(p)$$

$$D(5) = \frac{5000}{5} - 100$$

$$= 1000 - 100$$

$$= 900.$$

$$E(p) = \frac{5}{D(5)} \cdot D'(5)$$

$$= \frac{5}{900} (-200)$$

$$= -\frac{10}{9}.$$

$|E(p)| = \left| -\frac{10}{9} \right| = \frac{10}{9} > 1$, so $D(p)$ is elastic at $p=5$.

2a.] (1 pt) Find the domain of

$$f(x) = \frac{x^2 - 9}{x^2 + 3}$$

For #2 Solution,

See BD4 Quiz 7
Solutions.

2b.] (2 pts) For the same $f(x)$ as in part 2a, find the y -intercept and x -intercepts (if they exist).