

# Elasticities of Demand Problem Set 1

Principles of Microeconomics

July 30, 2025

## Instructions

Please answer on a separate sheet of paper and submit on Gradescope.

## Multiple Choice

Please briefly explain your choice with a sentence or calculation.

1. A good tends to have inelastic demand if
  - (a) the good is a necessity.
  - (b) there are many close substitutes.
  - (c) the market is narrowly defined.
  - (d) the long-run response is being measured.
2. The price of a good rises from \$8 to \$12, and the quantity demanded falls from 110 to 90 units. Calculated with the midpoint method, the elasticity is
  - (a)  $1/5$ .
  - (b)  $1/2$ .
  - (c) 2.
  - (d) 5.

## Free Response

3. For each of the following pairs of goods, which good would you expect to have more elastic demand? Please explain in a sentence.
  - (a) required textbooks or mystery novels
  - (b) Adele recordings or pop music recordings in general
  - (c) subway rides during the next six months or subway rides during the next five years

4. Suppose that business travelers and vacationers have the following demand for airline tickets from Chicago to Miami:

Price	Quantity Demanded (business travelers)	Quantity Demanded (vacationers)
\$150	2,100 tickets	1,000 tickets
200	2,000	800
250	1,900	600
300	1,800	400

- (a) As the price of tickets rises from \$200 to \$250, what is the price elasticity of demand for (i) business travelers and (ii) vacationers? (Use the midpoint method in your calculations.)
- (b) Why might vacationers and business travelers have different elasticities? Please explain in a sentence.
5. Suppose the price elasticity of demand for heating oil is 0.2 in the short run and 0.7 in the long run.
- (a) If the price of heating oil rises from \$1.80 to \$2.20 per gallon, what happens to the quantity of heating oil demanded in the short run? In the long run? (Use the midpoint method in your calculations.)
- (b) Why might this elasticity depend on the time horizon? Please explain in a sentence.