

ECON 201, Prof. Hogendorn: Problem Set #5

1. You opened an Internet Service Provider called Slow.net. You currently have 4,000 subscribers and 1,200 modems. No more than 25% of your customers are ever online at one time. You charge \$20 per month for a subscription. You hear that America Online has a price elasticity of  $-1.2$ , and you think your own elasticity is the same.
  - (a) Your marketing expert has suggested that lowering price to \$15 would raise total revenue. Use the derivative of total revenue to prove whether this is true or false.
  - (b) Suppose you did lower the price to \$15. How many subscribers would you expect to get, assuming you have a linear demand curve?
  - (c) Do you need more modems now that the price is \$15?
  - (d) Suppose instead you had a constant elasticity demand curve. How many subscribers would you get at a price of \$15?