

ECON 310
Homework Quiz #2
February 18, 9:00 am

Use the following information for problems 1-4. Alice consumes goods X and Y. Alice's utility function is given by $U=X^2*Y$. From this equation, we know that $MU_x= 2XY$ and $MU_y= X^2$.

1. Suppose Alice has an income of \$120, the price of X, $P_x = \$8$, and the price of Y, $P_y = \$2$.

What is Alice's optimal bundle of X and Y?

- $X= 42, Y = 3.5$
 - $X= 10, Y = 20$
 - $X= 7.5, Y = 30$
 - $X = 20, Y = 10$
2. Suppose Alice's income falls to \$60, but prices remain the same ($P_x= \$8$ and $P_y= \$2$). Given this change in her income, we know that good X is a _____ good for Alice, because when her income falls to \$60, Alice now consumes _____ units of X.
- Normal, 3.75
 - Inferior, 3.75
 - Normal, 5
 - Inferior, 5

Now, for questions (3) and (4), suppose the price of good X decreases from \$8 to \$4, but her income stays at the original level of \$120.

3. What is Alice's level of utility given this price change and her new optimal bundle?

- 2000
 - 4000
 - 250
 - 8000
4. Using the original price and quantity of X from part 1 and this new price and quantity of X, what is Alice's price elasticity of demand for good X in this region? Is Alice's demand elastic or inelastic?
- .5, elastic
 - .5, inelastic
 - 2, elastic
 - 2, inelastic
5. Can a good have both a downward sloping Engel curve and a downward sloping demand curve? Why or why not?
- Yes, if the substitution effect is larger than the income effect
 - Yes, if the substitution effect is smaller than the income effect
 - No, an inferior good is never a giffen good.
 - No, an inferior good is always a giffen good.
6. Suppose the demand curve for bus travel is downward sloping, and the income elasticity of demand for bus travel is negative. When the price of bus travel falls (good X), the budget line _____ and, assuming the substitution effect is larger than the income effect, the new optimal level of bus consumption _____.
- Pivots inward around the Y-axis, increases
 - Pivots outward around the Y-axis, increases
 - Pivots inward around the Y axis, decreases
 - Pivots outward around the Y-axis, decrease

7. If an activity is worth pursuing at all, then it should be pursued up to the point where
- total cost equals total benefit.
 - average cost equals average benefit.
 - marginal cost equals marginal benefit.
 - sunk costs equal zero.

Marginal Cost of Production

The following questions refer to the following table which shows a firm's marginal cost of production.

Quantity (number of units)	1	2	3	4	5	6	7	8
Marginal Cost (dollars per unit)	3	4	6	9	13	18	24	31

8. Refer to Marginal Cost of Production. Suppose the firm has \$20 in fixed costs. Its total cost of producing 4 units of output is
- \$29.
 - \$33.
 - \$56.
 - \$42.
9. Refer to Marginal Cost of Production. Suppose demand for the firm's product is horizontal at a price of \$18 per unit. How much output should the firm produce in order to maximize its profit?
- 3 units.
 - 4 units.
 - 6 units.
 - 7 units.
10. Refer to Marginal Cost of Production. Suppose the firm's fixed costs increase to \$60, and demand for the firm's product remains horizontal at a price of \$18 per unit. What is the firm's maximum profit?
- \$7.
 - \$5.
 - \$33.
 - \$48.