

EXERCISES CHAPTER 7

Exercise 1. Suppose demand for x_1 is $\frac{m-p_2}{p_1}$. Is x_1 :

- Normal or Inferior?
- Ordinary or Giffen?
- Complement, Substitute, or Neither for x_2 ?

Exercise 2. Find the Marshallian demand of x_1 and x_2 for the utility function:

$$U(x_1, x_2) = \min\{x_1, \frac{1}{2}x_2\}$$

Exercise 3. For $U(x_1, x_2) = \min\{x_1, \frac{1}{2}x_2\}$, is x_1 :

- Normal or Inferior?
- Ordinary or Giffen?
- Complement, Substitute, or Neither for x_2 ?

Exercise 4. For $U(x_1, x_2) = \min\{x_1, \frac{1}{2}x_2\}$, suppose $p_1 = 1, p_2 = 1$, plot the Engle curve for x_1 .

Exercise 5. For $U(x_1, x_2) = \min\{x_1, \frac{1}{2}x_2\}$, suppose $m = 15, p_2 = 1$, find and plot the inverse demand for x_1 .

Exercise 6. Find the Marshallian demand for the utility function:

$$u(x_1, x_2) = x_1 x_2^2$$

Exercise 7. For $U(x_1, x_2) = x_1 x_2^2$, is x_1 :

- Normal or Inferior?
- Ordinary or Giffen?
- Complement, Substitute, or Neither for x_2 ?

Exercise 8. Find the Marshallian demand for the utility function:

$$u(x_1, x_2) = \ln(x_1) + x_2$$

Exercise 9. Find the Marshallian demand for the utility function $u(x_1, x_2) = x_1 + 2x_2$ by taking the following steps:

- Write down a condition in terms of p_1, p_2, m that determines when consuming only x_1 is optimal. What is their Marshallian demand when this condition is met?
- Write down a condition in terms of p_1, p_2, m that determines when consuming only x_2 is optimal. What is their Marshallian demand when this condition is met?
- Write down a condition in terms of p_1, p_2, m that determines when any bundle on the budget line is optimal.