Exercise 1 [30]: Consider the following utility function \( U(x, y) = \min\{x, 2y\} \).

1. Draw the set of the indifference curves. Give the level of utility for at least 3 indifference curves.

2. Consider that the prices are \( p_x \) and \( p_y \) and the income is \( m \).

   (a) What is the demand function \( x(p_x, p_y, m) \) \ and \( y(p_x, p_y, m) \)?

   (b) Draw the budget line that corresponds to the prices \( p_x = \$1 \) and \( p_y = \$1 \) and the income is \( m = 4 \). What is the optimal bundle?

Exercise 2 [35]: Suppose the demand and supply of a good are given by:

\[
Q^d = 100 - 14p \\
Q^s = 35p + 2
\]

1. Graph the demand and supply curves and determine the equilibrium price and quantity.

2. If the government imposes a tax of \$1 per unit on supplier, who bears most of the tax burden?

Exercise 3 [35]: The utility that Laura receives by consuming food \( X \) and clothing \( Y \) is given by \( U(X, Y) = XY \).

1. Draw her indifference curve associated with a utility level of 12, and the indifference curve associated with a utility of 24. Are the indifference curve convex?

2. Suppose the food costs \$1 a unit, clothing costs \$3 a unit, and Janet has \$12 to spend on food and clothing. Graph the budget line she faces.

3. What is the utility-maximizing choice of food and clothing?

4. What is the marginal rate of substitution of food for clothing when utility is maximized?