

IN-CLASS ASSIGNMENT: Utility Maximization

Wednesday, February 18th 2015

5 points

Name: ANSWER KEY

1. You derive utility from x and y according to the utility function $U(x, y) = x^{0.7}y^{0.3}$. The price of x , p_x , is \$5 and the price of y , p_y , is \$2. Income, I , equals \$100. Assume x is on the x-axis and y is on the y-axis.
 - a. What is your optimal bundle of x and y given these prices and income?

1. $MRS = -\frac{\partial y}{\partial x} = -\frac{MU_x}{MU_y}$

2. $MRT = -\frac{5}{2} = -\frac{p_x}{p_y}$

3. $MRS = MRT$; $y = \frac{15}{14}x$

4. $I = p_x x + p_y y$; $100 = 5x + 2y$

5. $x = 14$

6. $y = 15$

- b. Graph your answer to part a on a preference map. Make sure to label all axis and curves.

