

2.1(1) Murphy was consuming 100 units of X and 50 units of Y . The price of X rose from 2 to 3. The price of Y remained at 4. How much would Murphy's income have to rise so that he can still exactly afford 100 units of X and 50 units of Y ?

2.5 (1) If Amy spent her entire allowance, she could afford 8 candy bars and 8 comic books a week. She could also just afford 10 candy bars and 4 comic books a week. The price of a candy bar is 50 cents. What is Amy's weekly allowance?

3) Mac Rowe doesn't sweat the petty stuff. In fact, he just cannot detect small differences. He consumes two goods, x and y . He prefers the bundle (x, y) to the bundle (x', y') if and only if $(xy - x'y' > 1)$. Otherwise he is indifferent between the two bundles. Show that the preferred relation is transitive for Mac.

4) Ambrose has an indifference curve with equation $x_2 = 20 - 4x_1^{1/2}$. When Ambrose is consuming the bundle (4, 16) what is her MRS?

5) Draw graphs with quantities of pepperoni pizza on the horizontal axis and quantities of anchovy pizza on the vertical axis to illustrate the following situations. In each case draw two different indifference curves and make a little arrow pointing in the direction of greater preference.

- Marvin loves pepperoni pizza and hates anchovy pizza.
- Mavis hates anchovy pizza and is completely indifferent about pepperoni pizza.

6) Wanda has the utility function $U(x, y) = \max\{x, y\}$. Wanda's preferences are convex.

T/F

7) The utility function $U(x_1, x_2) = 2\ln x_1 + 3\ln x_2$ represents Cobb-Douglas preferences.

T/F

8) Jim's utility function is $U(x, y) = xy$. Jerry's utility function is $U(x, y) = 1,000xy + 2,000$. Tammy's utility function is $U(x, y) = xy(1 - xy)$. Steve's utility function is $U(x, y) = -1/(10 + 2xy)$. Marjoe's utility function is $U(x, y) = x(y + 1,000)$. Pat's utility function is $U(x, y) = 0.5xy - 10,000$. Billy's utility function is $U(x, y) = x/y$. Francis's utility function is $U(x, y) = -xy$.

- Who has the same preferences as Jim?
- Who has the same indifference curves as Jim?
- Explain why the answers to (a) and (b) differ.

9) Angela's utility function is $U(x_1, x_2) = (x_1 + x_2)^3$. Her indifference curves are downward-sloping, parallel straight lines.

T/F?