Quiz #2.

ECON 310 – Ticket Number 16386.

Multiple Choice (3 points each):

1) Rory’s marginal utility for pizza
   b. provides a measure of how his utility changes as he consumes more pizza (with consumption of all other goods fixed).

2) Retief is indifferent between $A = (2,16)$ and $B = (6,4)$ (that is, $A \sim B$). Which of the following must be true?
   d. “If his preferences are convex, then he prefers the bundle $E = (4,10)$ to the bundle $A = (2,16)$ (that is, $A \prec E$).”

Additional Question:

1) Ernie’s utility for $x_1 =$ (wine) and $x_2 =$ (steak) is given by $U(X) = \sqrt{x_1 x_2}$. It follows that $MU_1 = \left(\frac{1}{2}\right) \frac{x_2}{x_1}$ and $MU_2 = \left(\frac{1}{2}\right) \frac{x_1}{x_2}$.
   a. Are his preferences “monotonic”? Explain.

Preferences are “monotonic” if “more is better.” $MU_1 = \left(\frac{1}{2}\right) \frac{x_2}{x_1}$ and $MU_2 = \left(\frac{1}{2}\right) \frac{x_1}{x_2}$ can never be negative, implying that increasing consumption of either good will never decrease utility. It follows that his preferences are “monotonic.”

b. Are his preferences “convex”? Explain.

Preferences are “convex” if “averages are preferred to extremes.” This will be the case if $MRS_{1,2}$ is “diminishing.” From the given information,

$MRS_{1,2} = \frac{MU_1}{MU_2} = \frac{x_2}{x_1}$. If we decrease $x_2$ and increase $x_1$ (while keeping the value of $U(X) = \sqrt{x_1 x_2}$ constant), the value of $MRS_{1,2} = \frac{x_2}{x_1}$ becomes smaller (that is, closer to zero). Thus, $MRS_{1,2}$ is “diminishing,” implying that his preferences are indeed “convex.”