

Econ 172A, Fall 2012: Quiz I, Answers

40 points possible (5 points for each correct answer on problem 1; 4 points for each correct answer on problem 2). High 40, Median 27.

Form 1:

1. Feasible set has corners $(-1, 0)$, $(1, 1)$, and $(2, 0)$.

- (a) Yes. Multiplying objective function by a positive constant does not change solution.
- (b) No. x^* is not a corner.
- (c) Yes. x^* is feasible.
- (d) 3.

2. (a) Yes. This states that the amount of raspberries used is no more than the amount available.

(b) Yes. This is the objective function.

(c) No. This says that the total number of ounces of ingredients is equal to the total number of units of output, but output is measured in twelve ounce servings. The correct expression is

$$12(x_L + x_B + x_U) = y_a + y_b + y_s + y_r.$$

(d) No. This is nonsense. (Independently increasing y_a does not increase the amount of L produced.)

(e) Yes. This describes how strawberries are consumed in production.

Form 2:

1. Feasible set has corners $(0, 0)$, $(1, 1)$, $(0, .5)$ and $(2, 0)$.

- (a) Yes. Multiplying objective function by a positive constant does not change solution.
- (b) Yes. x^* is a corner.
- (c) Yes. x^* is feasible.
- (d) 4.

2. (a) Yes. This is the objective function.

(b) No. This says that the total number of ounces of ingredients is equal to the total number of units of output, but output is measured in twelve ounce servings. The correct expression is

$$12(x_L + x_B + x_U) = y_a + y_b + y_s + y_r.$$

(c) No. This is nonsense. (Independently increasing y_a does not increase the amount of L produced.)

(d) Yes. This describes how strawberries are consumed in production.

(e) Yes. This states that the amount of strawberries used is no more than the amount available.

Form 3:

1. Feasible set has corners $(0, .5)$, $(1, 1)$, and $(0, 2)$.

- (a) No. Multiplying objective function by a negative constant changes “max” to “min.”
 - (b) Yes. x^* is a corner.
 - (c) Yes. x^* is a feasible.
 - (d) 3.
2. (a) Yes. This is the objective function.
- (b) No. Should be inequality.
- (c) No. This says that the total number of ounces of ingredients is equal to the total number of units of output, but output is measured in twelve ounce servings. The correct expression is

$$12(x_L + x_B + x_U) = y_a + y_b + y_s + y_r.$$

- (d) No. This is nonsense. (Independently increasing y_a does not increase the amount of L produced.)
- (e) Yes. This describes how blueberries are consumed in production.