Lesson 2.3 Practice: Linear Programming

School Launch · Algebra II · Unit 2: Linear Systems and Linear Programming · Worksheet A

Calculator for decimals

Name _____ Date _____ Score _____ / 10

Show your work under each problem, one step per line, and check your answer. Word problems: name the unknown, write the equation, solve, and answer in a sentence with units.

1. Maximize $P = 2x + 2y$ subject to $x \geq 0$, $y \geq 0$, $x \leq 5$, $y \leq 8$, $x + y \leq 10$. Give the optimal vertex and maximum. EASY

2. Maximize $P = 4x + 4y$ subject to $x \geq 0$, $y \geq 0$, $x \leq 7$, $y \leq 7$, $x + y \leq 9$. Give the optimal vertex and maximum. EASY

3. Maximize $P = 8x + 7y$ subject to $x \geq 0$, $y \geq 0$, $x \leq 4$, $y \leq 7$, $x + y \leq 9$. Give the optimal vertex and maximum. EASY

4. Maximize $P = 6x + 5y$ subject to $x \geq 0$, $y \geq 0$, $x \leq 7$, $y \leq 5$, $x + y \leq 8$. Give the optimal vertex and maximum. MEDIUM

5. Maximize $P = 3x + 6y$ subject to $x \geq 0$, $y \geq 0$, $x \leq 12$, $y \leq 5$, $x + y \leq 13$. Give the optimal vertex and maximum. MEDIUM

6. Maximize $P = 3x + 7y$ subject to $x \geq 0$, $y \geq 0$, $x \leq 8$, $y \leq 5$, $x + y \leq 11$. Give the optimal vertex and maximum. MEDIUM

7. Maximize $P = 5x + 4y$ subject to $x \geq 0$, $y \geq 0$, $x \leq 11$, $y \leq 11$, $x + y \leq 17$. Give the optimal vertex and maximum. MEDIUM

8. Maximize $P = 4x + 2y$ subject to $x \geq 0$, $y \geq 0$, $x \leq 12$, $y \leq 6$, $x + y \leq 16$. Give the optimal vertex and maximum. HARD

9. Maximize $P = 3x + 2y$ subject to $x \geq 0$, $y \geq 0$, $x \leq 9$, $y \leq 4$, $x + y \leq 12$. Give the optimal vertex and maximum. HARD

10. Maximize $P = 4x + 5y$ subject to $x \geq 0$, $y \geq 0$, $x \leq 8$, $y \leq 9$, $x + y \leq 15$. Give the optimal vertex and maximum. HARD