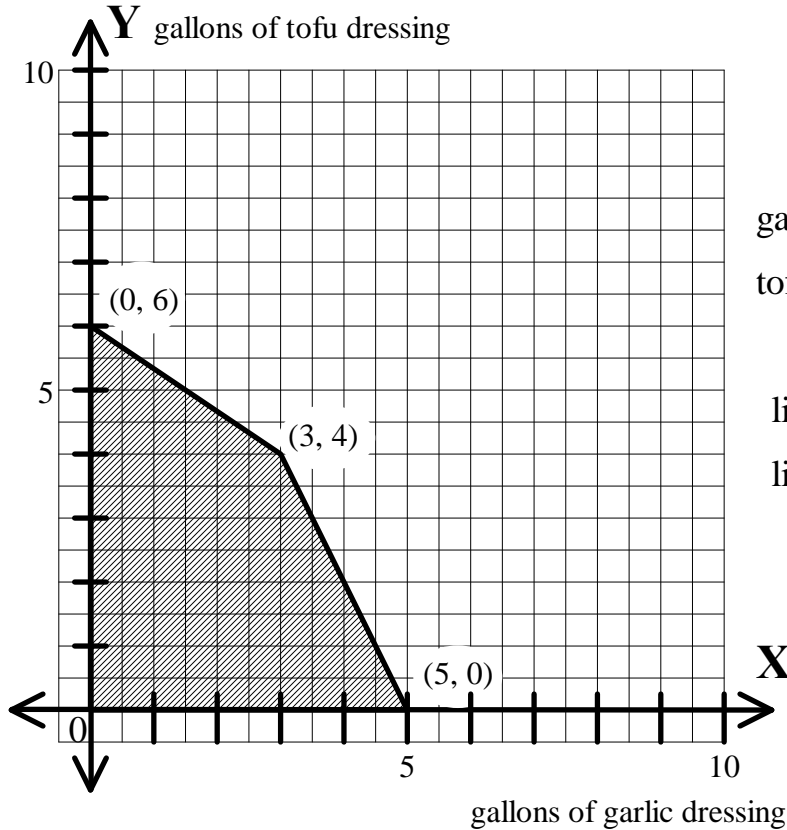# Algebra II   Worksheet #6   Unit 4   selected solutions

Solve the following linear programming problem. Show all of your work neatly organized.

2. Jim Olsen makes and sells gormet food items. He makes two types of salad dressing, garlic and tofu. Each gallon of garlic dressing requires 2 quarts of oil and 2 quarts of vinegar. Each gallon of tofu dressing requires 3 quarts of oil and 1 quart of vinegar. He has only 18 quarts of oil and 10 quarts of vinegar on hand. He makes a $3 profit on each gallon of garlic dressing and a $2 profit on each gallon of tofu dressing. How many gallon of each type should he make in order to maximize his profits?

# of gallons	oil used quarts	vinegar used quarts	Profit dollars
garlic x	2x	2x	3x
tofu y	3y	1y	2y

limitation: 18 qts. of oil $2x + 3y \leq 18$

limitation: 10 qts. of vinegar $2x + 1y \leq 10$

Objective Function $x \geq 0$

$$P = 3x + 2y$$ $y \geq 0$

at (0, 6), P = $12

at (3, 4), P = $17

at (5, 0), P = $15

He should make 3 gallons of garlic dressing and 4 gallons of tofu dressing.