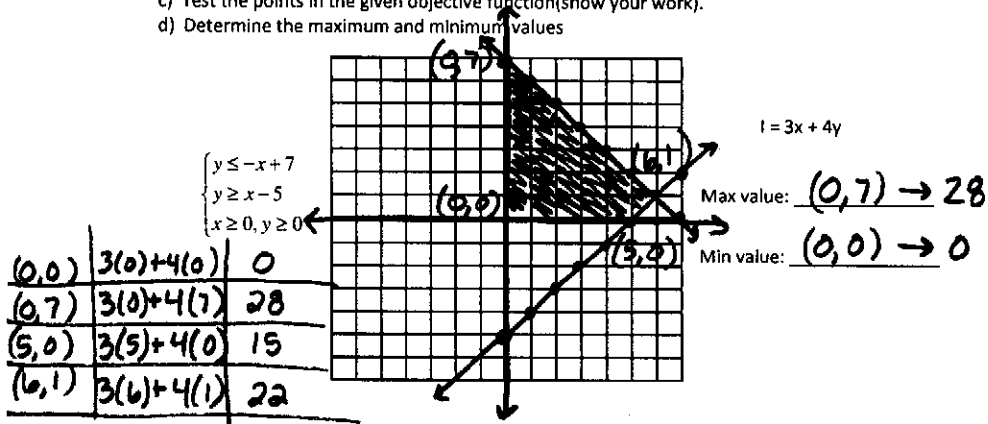


Name: Kuf  
 Unit 2 Test – Part 1 (Linear Programming)

Date: \_\_\_\_\_ Period: \_\_\_\_\_

- 1.. a) Graph the constraints and shade the feasible region.  
 b) Label the vertices (corner points).  
 c) Test the points in the given objective function (show your work).  
 d) Determine the maximum and minimum values



## 2. Linear Programming:

A farmer has 90 acres available for planting corn and alfalfa. Seed costs \$4 per acre for corn and \$6 per acre for alfalfa. Labor costs are \$20 per acre for corn and \$10 per acre for alfalfa. The farmer intends to spend no more than \$480 for seed and no more than \$1400 for labor. The expected income is \$110 per acre for corn and \$150 per acre for alfalfa.

$x$  = corn  
 $y$  = alfalfa

- a) Write a system of inequalities to represent the constraints:

- $x \geq 0$
- $y \geq 0$
- $x + y \leq 90$
- $4x + 6y \leq 480$
- $20x + 10y \leq 1400$

- b) Write the objective function that maximizes the income:

$$I = 110x + 150y$$

Nope...you don't have to graph this one! ☺