

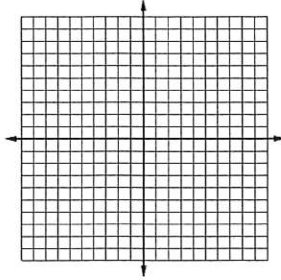
Linear Programming HW

Name:

For each of the following, graph the inequalities and shade the solution.

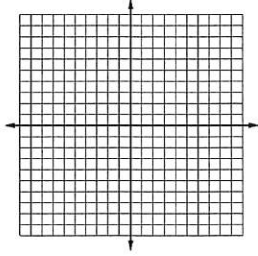
1. $y \leq -2x + 7$

$y > x - 4$

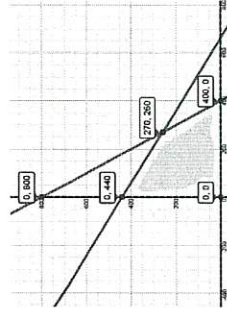


2. $2x - y \leq 14$

$y \geq -2$



3. The graph below shows graphed constraints. List the vertices and decide which vertices maximize and minimize the objective function $P = 3.5x + 4y$.



4. Fort Dorchester High School is looking to buy some filing cabinets. You know that Cabinet X costs \$10 per unit, requires six square feet of floor space and holds eight cubic feet of files. Cabinet Y costs \$20 per unit, requires eight square feet of space, and holds twelve cubic feet of files. You have been given \$140 to purchase, though you don't have to spend that much. The school filing room has no more than 72 square feet of cabinets. How many of which model should you buy to maximize your storage volume?

5. The Patriot Pontoon makes two types of boats, a two person and a four person boat. Each two person boat requires 0.9 labor-hours from the cutting department and 0.8 labor hours from the assembly department. Each four person boat requires 1.8 labor-hours from the cutting department and 1.2 hours from the assembly department. The maximum labor hours available per month in the cutting and assembly departments are 864 and 627, respectively. The company makes a profit of \$25 on each two person boat and \$40 on each 4 person boat. How many of each kind should the company produce in order to maximize profit?

4)

Objective: $8x + 12y = V$

Constraints: $x \geq 0$, $y \geq 0$

$10x + 20y \leq 140$

$6x + 8y \leq 72$

$y \leq \frac{1}{2}x + 9$

$y \leq \frac{3}{4}x + 9$

Vertices: $(0,0)$, $(0,7)$, $(8,3)$, $(12,0)$

$V = 0$

$V = 84$

$V = 100$

$V = 96$

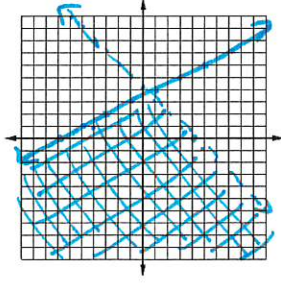
Linear Programming HW

Name:

For each of the following, graph the inequalities and shade the solution.

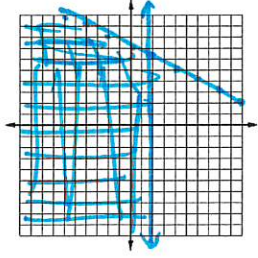
1. $y \leq -2x + 7$

$y > x - 4$

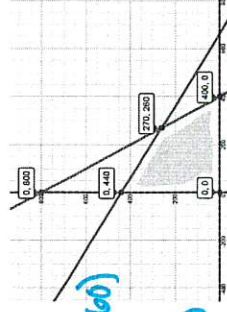


2. $2x - y \leq 14$

$y \geq -2$



3. The graph below shows graphed constraints. List the vertices and decide which vertices maximize and minimize the objective function $P = 3.5x + 4y$.



vertices

$(0,0)$

$(0,440)$

$(270,260)$

$(400,0)$

max: $(270,260)$

min: $(0,0)$

$P = 0$

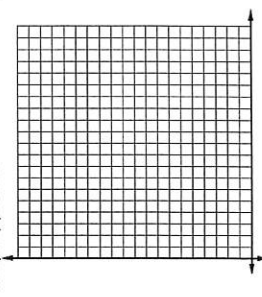
$P = 1760$

$P = 1985$

$P = 1400$

4. Fort Dorchester High School is looking to buy some filing cabinets. You know that Cabinet X costs \$10 per unit, requires six square feet of floor space and holds eight cubic feet of files. Cabinet Y costs \$20 per unit, requires eight square feet of space, and holds twelve cubic feet of files. You have been given \$140 to purchase, though you don't have to spend that much. The school filing room has no more than 72 square feet of cabinets. How many of which model should you buy to maximize your storage volume?

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Vertices

$(0,0)$

$(0,480)$

$(703.75,0)$

$(255,352.5)$

$P = 0$

$P = 19,200$

$P = 19,593.75$

$P = 20,475$