

1) Graph the linear system: 
$$\begin{cases} x \geq 0 \\ y \geq 0 \\ x + y \leq 5 \end{cases}$$

2) Find the optimal values (max and min) of  $5x + 2y$  which occur at the vertices of the area graphed above.

3) Graph the linear system:

$$\begin{cases} x \geq 0 \\ y \geq 0 \\ 3x + 5y \leq 600 \end{cases}$$

4) Find the optimal values (max and min) of  $7x + 8y$  which occur at the vertices of the area graphed above.

5) A company makes canoes and kayaks. It can make at most 20 of these per week.

Let:

C = number of canoes made

K = number of kayaks made

Create a system of constraints for the possible production values of canoes and kayaks.

6) Graph this constrained system.

7) If canoes sell for \$1200, and kayaks sell for \$900, what is the objective equation if the object is to maximize revenue?

8) Find the production of canoes and kayaks which maximizes the objective. This maximum will occur at a vertex of the region.

9) A company sells shoes and clogs, and it can only have 400 of these footwear items on hand each day.

Let:

S = number of pairs of shoes sold

C = number of pairs fo clogs sold

Create a system of constraints for the possible daily sales of shoes and clogs.

10) Graph this constrained system.

11) If shoes sell for \$50, and clogs sell for \$45, what is the objective equation if the object is to maximize revenue?

12) Find the sales of shoes and clogs which maximizes the objective. This maximum will occur at a vertex of the region.