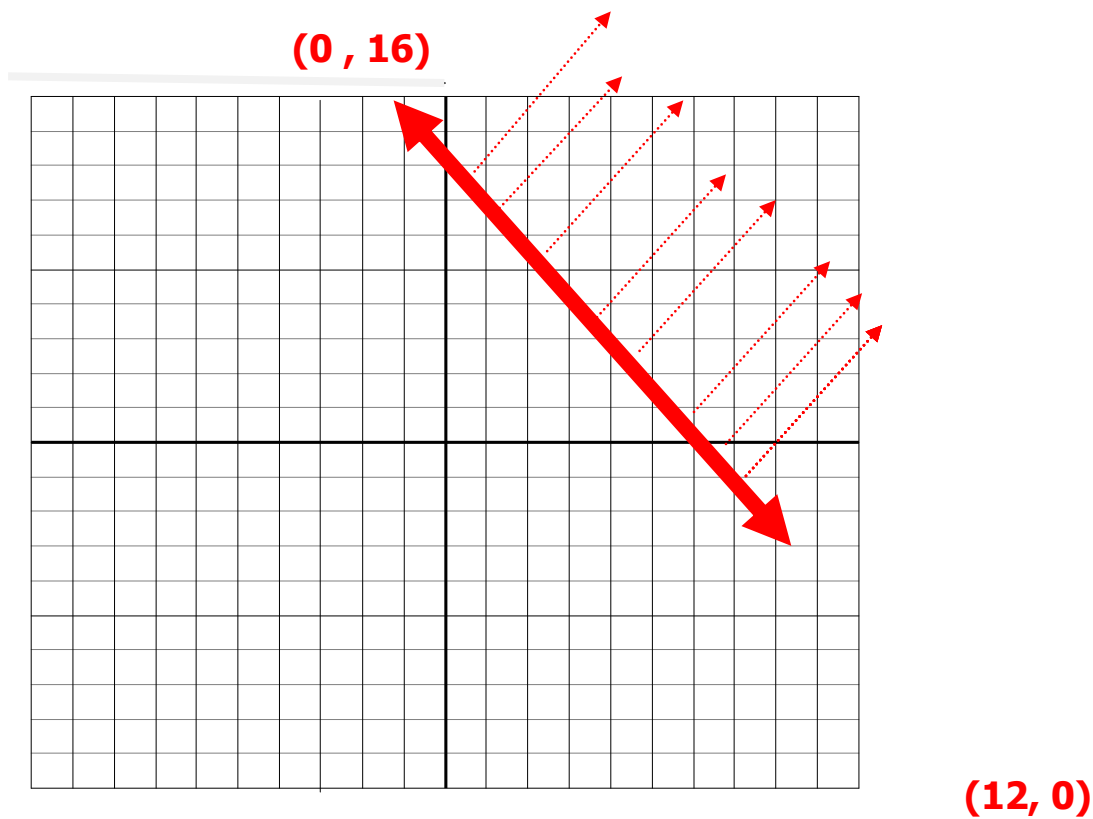


NAME _____ Solutions _____ SCORE: _____/20
*** RETAIN GRADED PAPERS FOR YOUR RECORDS ***

1. Graph $4x + 3y \geq 48$. Your graph must include:
- A. The coordinates of the y-intercept. Let $x = 0$ and solve for y
 $4(0) + 3y = 48$ then $y = 48/3 = 16$ **Therefore, yintercept is (0 , 16)**
 - B. The coordinates of the x-intercept. Let $y = 0$ and solve for x
 $4x + 3(0) = 48$ then solving for x , we get $4x = 48$, so $x = 12$
Therefore, xintercept is (12 , 0)
 - C. The appropriate shading for the inequality.



2. A special diet for a farm animal is to contain at most 150 units of protein. Each gram of Food A contains 6 units of protein and each gram of Food B contains 7 units of protein. How many grams of each type of food should the farmer mix so that the animal gets at most 150 units of protein?

Let $x = \#$ of grams of food A and $y = \#$ of grams of food B.
Write a linear inequality for the protein requirement.

$$\begin{aligned} 6x + 7y &\leq 150 \\ x &\geq 0 \\ y &\geq 0 \end{aligned}$$

2) Graph & **LABEL** the feasible region for the following system of equations:

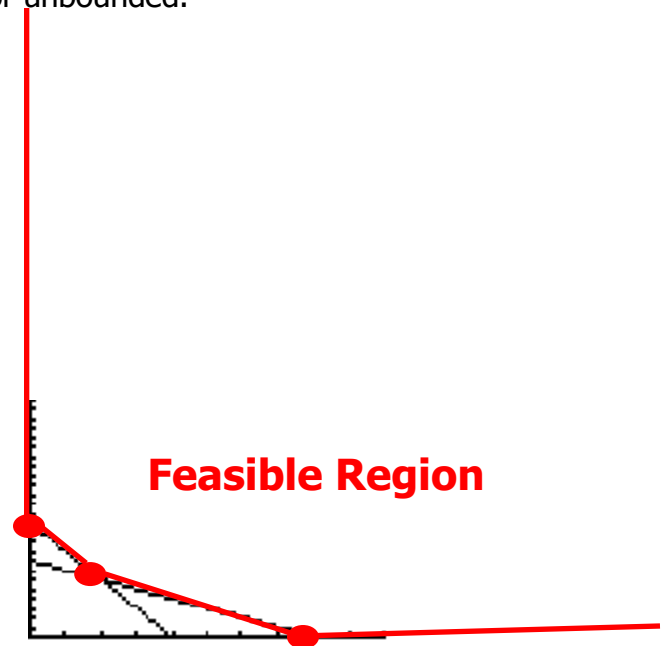
Be sure to include **ALL** of the following:

- A. Label each of the 4 lines with its equation.
- B. Clearly shade the inequalities.
- C. Darken the boundary lines of the feasible region.
- D. Draw a big dark dot on the corner points of the feasible region.
- E. Write the label "F R" in the feasible region.
- F. State whether the feasible region is bounded or unbounded.

$$\begin{aligned}3x + y &\geq 12 \\2x + 2y &\geq 16 \\x &\geq 0 \\y &\geq 0\end{aligned}$$

```
Plot1 Plot2 Plot3
\Y1=-3X+12
\Y2=-X+8
\Y3=0
\Y4=
\Y5=
\Y6=
\Y7=
```

```
WINDOW
Xmin=0
Xmax=10
Xscl=1
Ymin=0
Ymax=25
Yscl=1
Xres=1
```



Corner points:

(0, 12) y-intercept of the first inequality

(2, 6) intersection point of the first and second inequalities

(8, 0) intersection point of the second and fourth inequalities

The feasible region is Unbounded.