1st Semester Test Study Guide: Chapters 3 and 4

Name:_____ Period_____

Directions: Find the intersection of each pair of equations. Write your answers in ordered pairs. Name each system. **Show all work.**

1. $2x - 7y = 31$
   $4x + 3y = 11$

2. $y = 3x - 1$
   $6x - 2y = 16$

3. $x - 4y = 14$
   $3x = 2y + 2$

4. $5x - 4y = -9$
   $2x + 4y = 30$

Directions: Solve the word problem. **Show all work.** Answer the question with a complete sentence in the answer blanks.

5. Mattie bought some flowers to do some gardening. She bought 6 cases of daffodils and 2 cases of tulips, spending a total of $130. Later she bought 3 more cases of each spending $105. How much does each case of flowers cost?

_____

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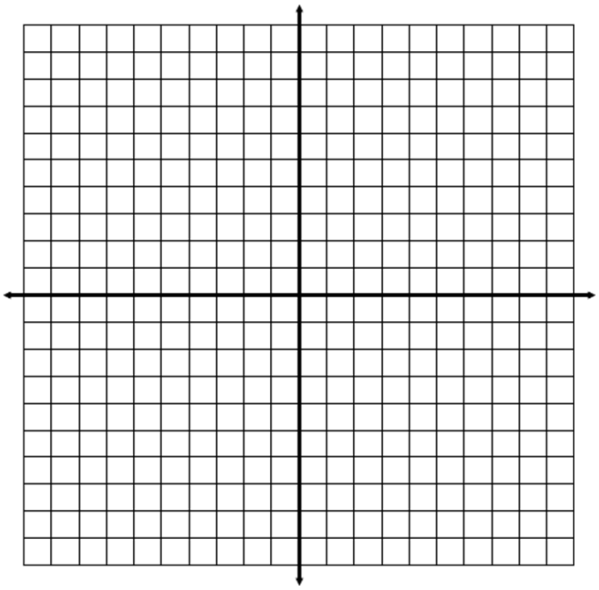
Directions: Find all the answers (shade the correct area) for each pair of inequalities.

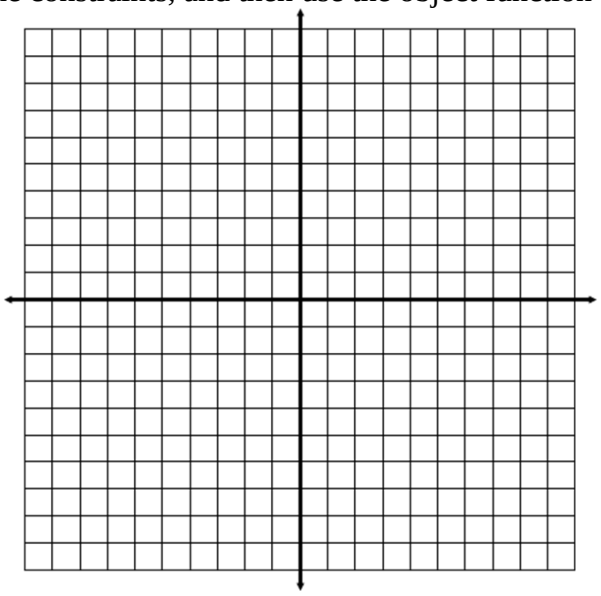
6. $y < \frac{2}{3}x + 6$

   $4x + 3y \geq 12$



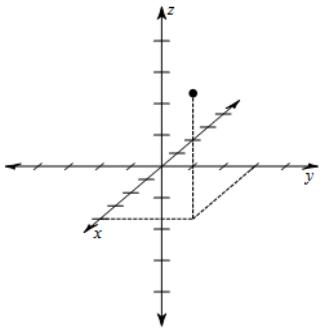
Directions: Find the vertices of the bounded region created by the constraints, and then use the object function to find the **maximum value**.

7.
$$y \geq \frac{2}{3}x - 5$$
$$y \leq -\frac{4}{3}x + 7$$
$$y \leq \frac{8}{3}x + 7$$
$$P = 3x + 2y - 4$$

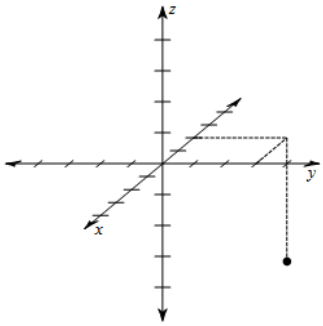


Directions: Find the location of the point in each of the 3 dimensional graphs.

8.

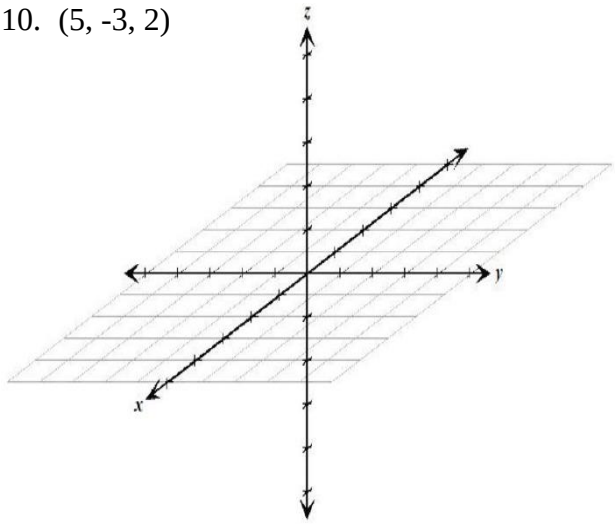


9.

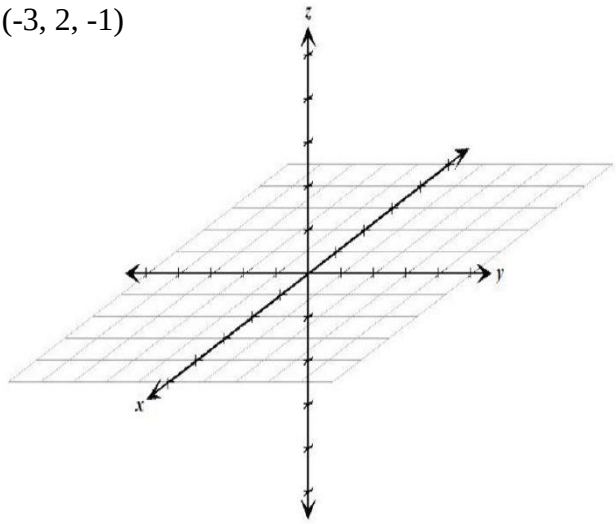


Directions: Draw the points in the 3 dimensional graphs.

10. (5, -3, 2)



11. (-3, 2, -1)



Directions: Using the matrices below, evaluate each expression without using a graphing calculator. If not possible, write "**Not Possible**."

$A = \begin{bmatrix} 6 & -2 \end{bmatrix}$ $B = \begin{bmatrix} -4 & 0 \\ 3 & 2 \end{bmatrix}$ $C = \begin{bmatrix} 7 & -1 \\ -2 & 5 \end{bmatrix}$ $D = \begin{bmatrix} -3 & 9 & 0 \\ 2 & -1 & -6 \end{bmatrix}$ $E = \begin{bmatrix} 3 & -4 & 1 \\ 0 & 5 & -2 \end{bmatrix}$

12. $B - C =$

13. $D + E =$

14. $B - D =$

15. $4A =$

Directions: Find the value of each variable.

16. $\begin{bmatrix} 2 & a \\ -4 & 3 \end{bmatrix} \cdot \begin{bmatrix} -6 & 7 \\ 2 & b \end{bmatrix} = \begin{bmatrix} -18 & 2 \\ 30 & -16 \end{bmatrix}$

17. $\begin{bmatrix} 4 & -2 & 3 \end{bmatrix} \cdot \begin{bmatrix} 2 & 4 \\ 5 & c \\ -2 & -1 \end{bmatrix} = \begin{bmatrix} d & 3 \end{bmatrix}$

18. $\begin{bmatrix} 3 & -4 \\ e & 5 \end{bmatrix} \cdot \begin{bmatrix} -1 & 7 \\ 6 & f \end{bmatrix} = \begin{bmatrix} -27 & 21 \\ 28 & 14 \end{bmatrix}$

19. $\begin{bmatrix} 4 \\ -2 \\ g \end{bmatrix} \cdot \begin{bmatrix} -5 & h & 3 \end{bmatrix} = \begin{bmatrix} -20 & 28 & 12 \\ 10 & -14 & -6 \\ 5 & -7 & -3 \end{bmatrix}$