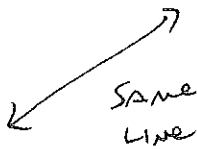
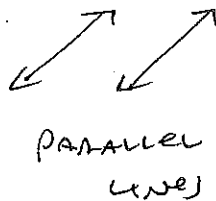


1. Give an example of a graph for each type of system (2 X 2):

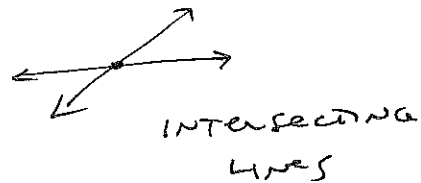
a. dependant



b. inconsistent



c. independent



Solve. Use any method. Write your answer as an ordered pair or ordered triple.

2.
$$\begin{cases} 3x + 2y = 2 \\ x + 6y = 18 \end{cases}$$

$(-1.5, 3.25)$

3.
$$\begin{cases} y = \frac{1}{2}x + 9 \\ 2y - x = 1 \end{cases}$$

NO SOLUTION

4.
$$\begin{cases} 3x - y = -1 \\ 2x - y + z = -6 \\ x + 4y - z = 9 \end{cases}$$

$(0, 1, -5)$

5.
$$\begin{cases} 2x - 3y + 5z = 5 \\ x - y - 2z = 2 \\ -3x + 3y + 6z = 5 \end{cases}$$

NO SOLUTION

6.
$$\begin{cases} 3x - y - 2z = 0 \\ x + 2y - 4z = 0 \\ 2x - 10y + 12z = 0 \end{cases}$$

$(\frac{8}{7}z, \frac{10}{7}z, z)$

ex $(0, 0, 0)$ or $(\frac{8}{7}, \frac{10}{7}, 1)$

7. 210 people attended a school carnival. The total amount of money collected was \$710. Prices were \$5 for regular tickets, \$3 for student tickets and \$1 for children. The number of regular tickets was 10 more than twice the number of children tickets. How many of each type of ticket was sold?

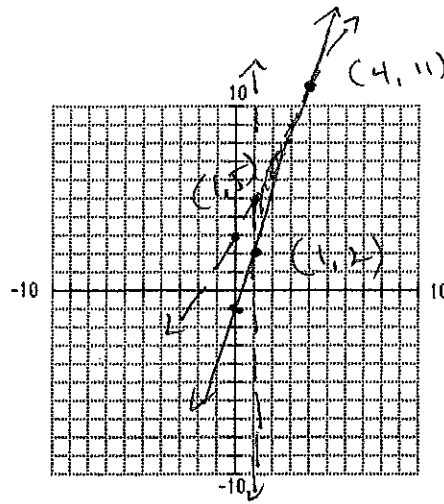
$$\begin{aligned} r + s + c &= 210 \\ 5r + 3s + c &= 710 \\ r &= 10 + 2c \end{aligned}$$

$$\begin{bmatrix} 1 & 1 & 1 & 210 \\ 5 & 3 & 1 & 710 \\ 1 & 0 & -2 & 10 \end{bmatrix}$$

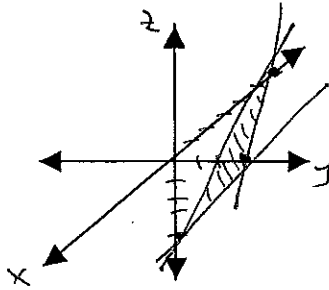
There were 70 regular, 110 student, AND 30 children's tickets sold.

8. Graph:
$$\begin{cases} y < 2x + 3 \\ y \geq 3x - 1 \\ x > 1 \end{cases}$$

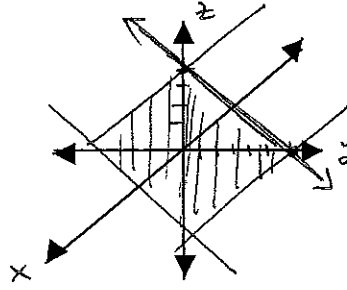
Label the vertices.



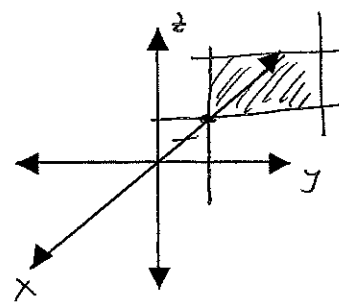
9. $-2x + 4y - 3z = 12$



10. $4y + 6z = 24$



11. $5x = -10$



12. You can make 2 different kinds of pie, strawberry-rhubarb and apple. Because strawberries are expensive, you only make a profit of \$2.50 per strawberry-rhubarb pie versus \$3.00 per apple pie. Each strawberry pie takes 1 hour to make and requires 2 lbs of dough. The apple pies each take 2 hours to make and require 1 lb of dough. You have 6 lbs of dough and 6 hours. How many of each type of pie should you make to maximize your profit?

$x = \underline{\text{\# Strawberry pies}}$

$y = \underline{\text{\# Apple pies}}$

Constraints:

$x \geq 0$

$y \geq 0$

$x + 2y \leq 6$ (Time)

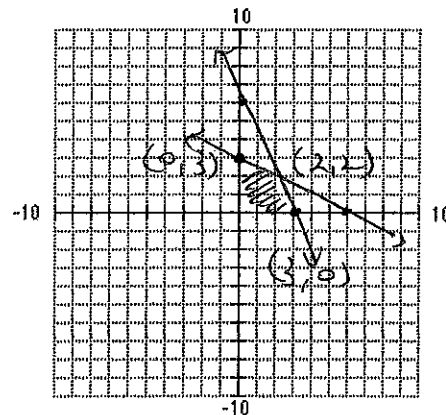
$2x + y \leq 6$ (Dough)

Objective quantity:

$P = 2.5x + 3y$

Write your answer as a complete sentence:

You should make
2 strawberry pies and 2 apple pies
to maximize profit at \$11.



$(3, 0) \rightarrow P = 2.5(3) + 0 \cdot 3 = \7.50

$(2, 2) \rightarrow P = 2.5(2) + 3 \cdot 2 = \11

$(0, 3) \rightarrow P = 2.5(0) + 3 \cdot 3 = \9