Graphing Systems of Equations - In Class Notes

System of Equations - A set of two or more equations that contain two or more variables

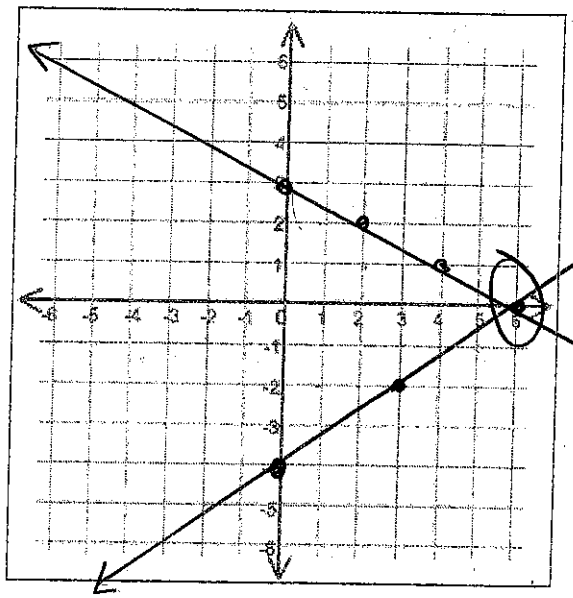
Solution to a System of Equations - A set of values that make all equations in a system true.

Solve Each System by Graphing and Check Your Answer

Steps
1. graph each equation
2. Find pt of intersection

$y = \frac{2}{3}x - 4$

$y = -\frac{1}{2}x + 3$



Check Your Answer

$y = \frac{2}{3}x - 4$ $\quad$ $y = -\frac{1}{2}x + 3$

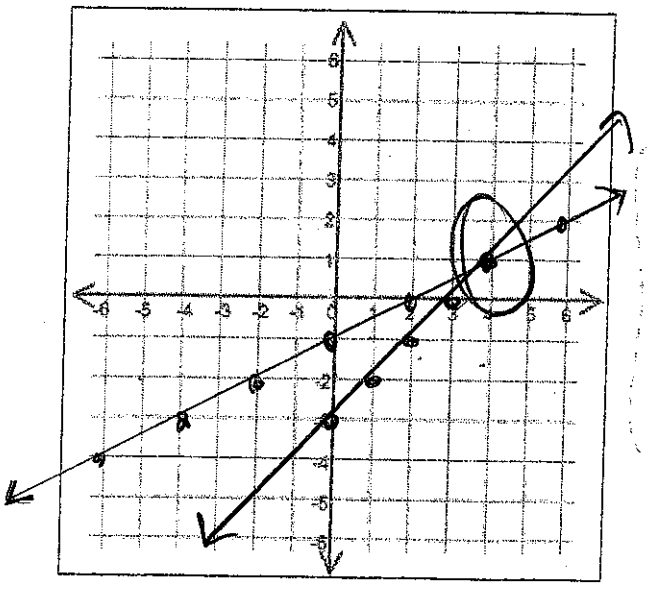
$0 = \frac{2}{3}(6) - 4$ $\quad$ $0 = -\frac{1}{2}(6) + 3$

$0 = 0$ ✓ $\quad$ $0 = 0$

Solution = (6, 0)

$y = \frac{1}{2}x - 1$

$y = x - 3$



Check Your Answer

$y = \frac{1}{2}x - 1$ $\quad$ $y = x - 3$

$1 = \frac{1}{2}(4) - 1$ $\quad$ $1 = 4 - 3$

$1 = 1$ ✓ $\quad$ $1 = 1$

Solution = (4, 1)

Graphing Systems of Equations - In Class Notes

Josh $y = 3x$
Sarah $y = 2x + 5$

Sarah and Josh are selling tickets to the school play. On the first day of selling Sarah sold 5 tickets and Josh sold no tickets. Each day after that Sarah sold 2 tickets and Josh sold 3 tickets. At how many days will they have sold the same amount of tickets?

5 Days

Write Your Equations

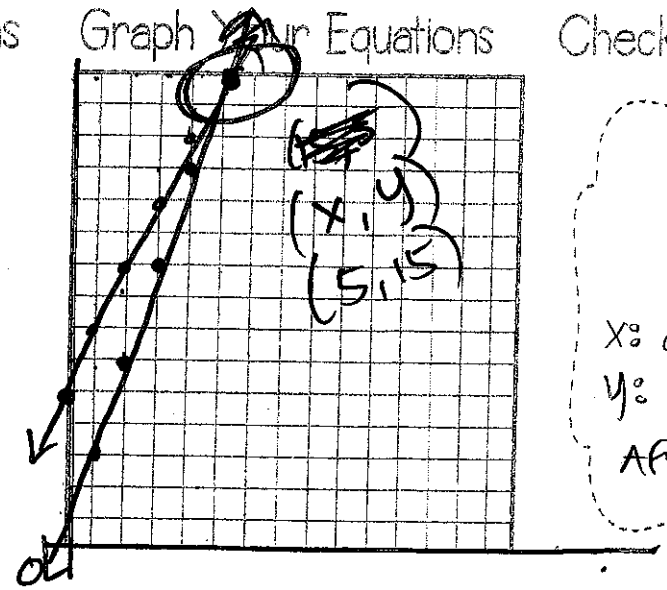
Sarah

$y = 2x + 5$

Josh

$y = 3x$

Graph Your Equations



Check Your Answer

(5, 15)
x y

x: days
y: tickets
After 5 days

A) "The Place To Be Bowling" Bowling alley charges a $2 shoe rental fee and $3 per game.
B) "Bowling B' The Best" Bowling alley charges a $4 shoe rental fee and $2 per game.
For how many games will it cost the same to bowl at either alley?

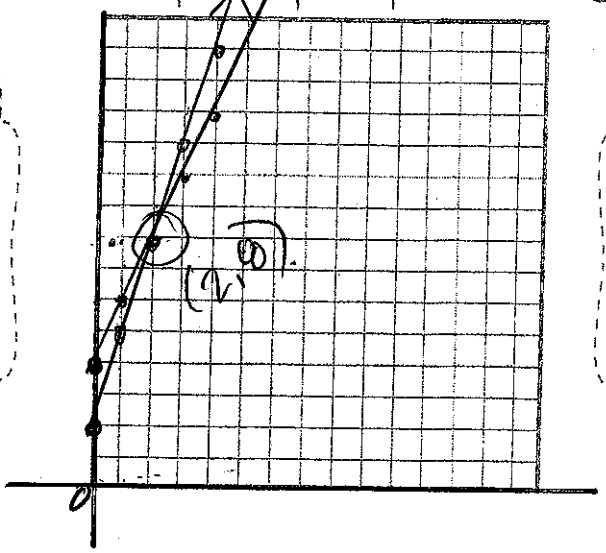
8 Games

Write Your Equations

A) $y = 3x + 2$

B) $y = 2x + 4$

Graph Your Equations



Check Your Answer

(2, 8)
x: games
y: cost
8 games

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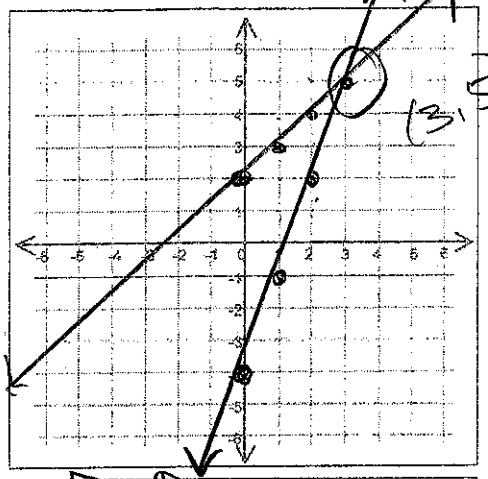
Graphing Systems of Equations - Homework

Name_____ Date_____ Score_____

Solve Each System by Graphing and Check Your Answer

$y = 3x-4$

$y = x+2$



Check Your Answer

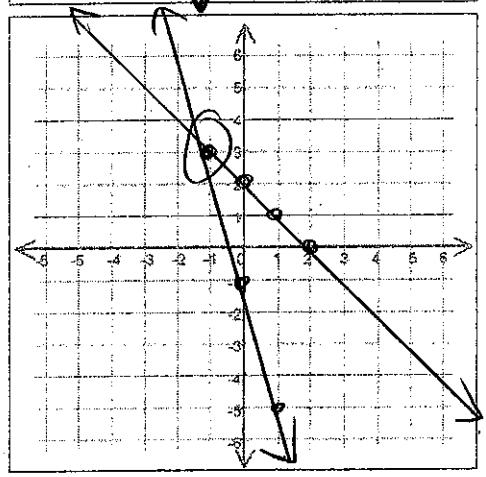
$y = 3x-4$: $5 = 3(3)-4$, $5 = 5$ ✓

$y = x+2$: $5 = 3+2$, $5 = 5$

Solution = (3, 5)

$y = -x+2$

$y = -4x-1$



Check Your Answer

$y = -x+2$: $3 = -(-1)+2$, $3 = 3$ ✓

$y = -4x-1$: $3 = -4(-1)-1$, $3 = 3$

Solution = (-1, 3)

Eric has already ran 5 miles and is continuing to run at a pace of 1 mile per hour. Jess has only run 2 miles and is continuing to run at a pace of 2 miles per hour. In how many hours will they have ran the same number of miles?

3 Hours

Write Your Equations

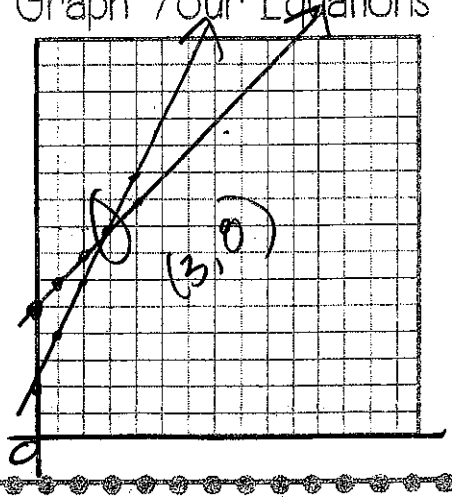
Eric

$y = x+5$

Jess

$y = 2x+2$

Graph Your Equations



Check Your Answer

x = hours

y = miles

(3, 8)

↑ hrs ↑ miles