

U-1 Box 4

# What Were the Headlines After a Mad Scientist Trained Two Eggs to Attack a Candy Store With Sharp Sticks?

Solve each system of equations below by graphing. Cross out the box containing your answer. When you finish, print the letters from the remaining boxes in the spaces at the bottom of the page.



①  $y = \frac{2}{3}x - 1$  (3, 1)  
 $y = -x + 4$

③  $y = \frac{1}{2}x - 3$  (-2, -4)  
 $y = \frac{3}{2}x - 1$

⑤  $x + y = 0$  (-2, 2)  
 $3x + y = -4$

⑦  $x + 2y = -4$   
 $4y = 3x + 12$  (-4, 0)

⑧  $y = -2$  (5, -2)  
 $2x - 5y = 20$

②  $y = -2x + 1$   
 $y = x - 5$  (2, -3)

④  $y = 2x$  (1, 2)  
 $x + y = 3$

⑥  $x = 3 - 3y$   
 $x + 3y = -6$   
No solution

⑨  $4x + 3y = -15$   
 $y = x + 2$  (-3, -1)

|               |                |                   |               |               |                |               |                |
|---------------|----------------|-------------------|---------------|---------------|----------------|---------------|----------------|
| TW<br>(-4, 0) | EG<br>(-4, -5) | OS<br>no solution | GS<br>(4, 1)  | WE<br>(3, 1)  | ET<br>(-2, -4) | SP<br>(-1, 6) | TR<br>(-3, -1) |
| EA<br>(-3, 5) | TS<br>(1, 2)   | RA<br>(0, 3)      | TI<br>(2, -3) | MI<br>(4, -3) | SS<br>(5, -2)  | NT<br>(-1, 0) | UP<br>(-2, 2)  |
|               |                |                   |               |               |                |               |                |

OBJECTIVE 5-1 To solve systems of equations by graphing. ALGEBRA WITH PIZZAZZ! © Creative Publications 161

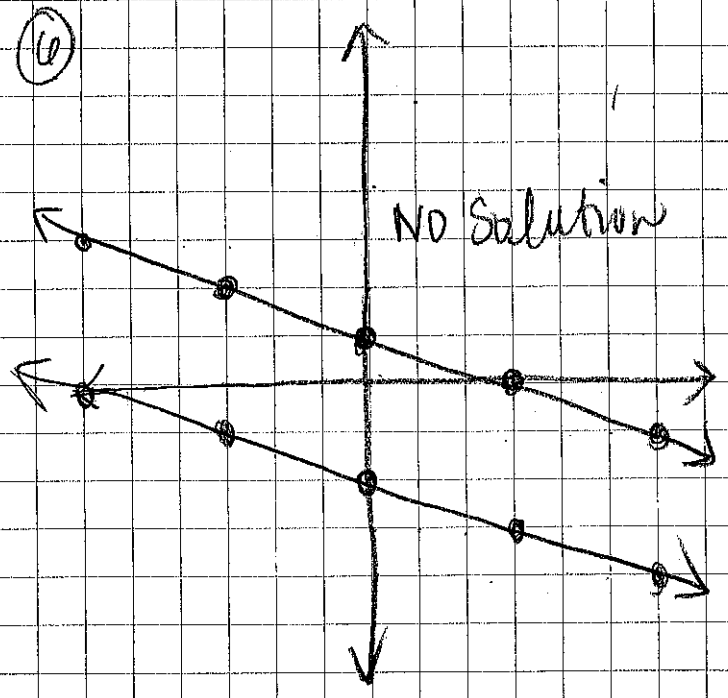
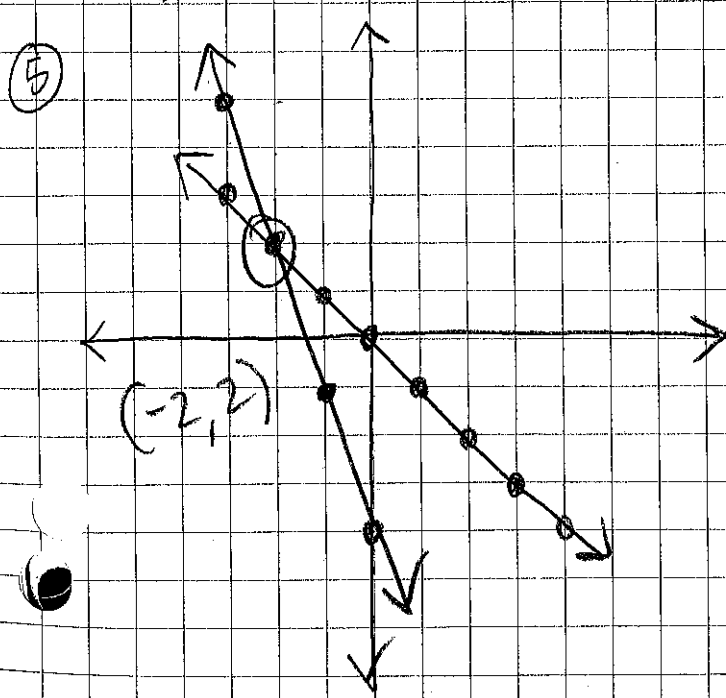
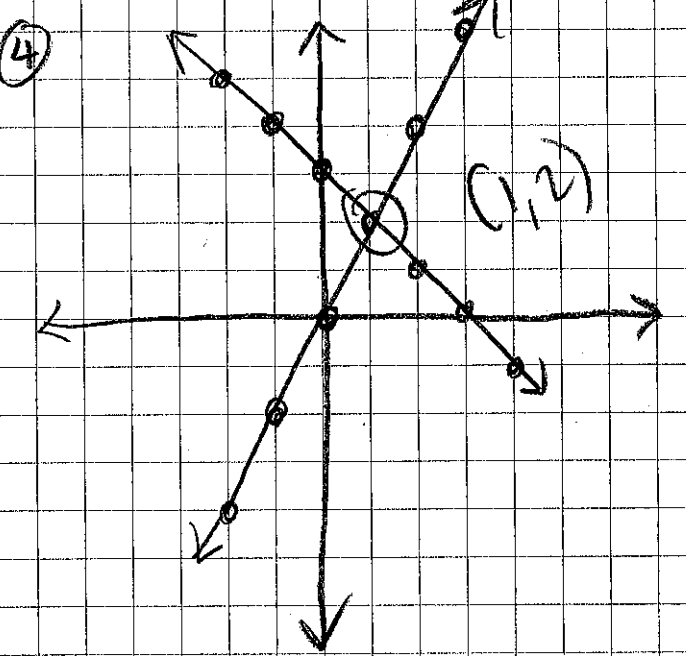
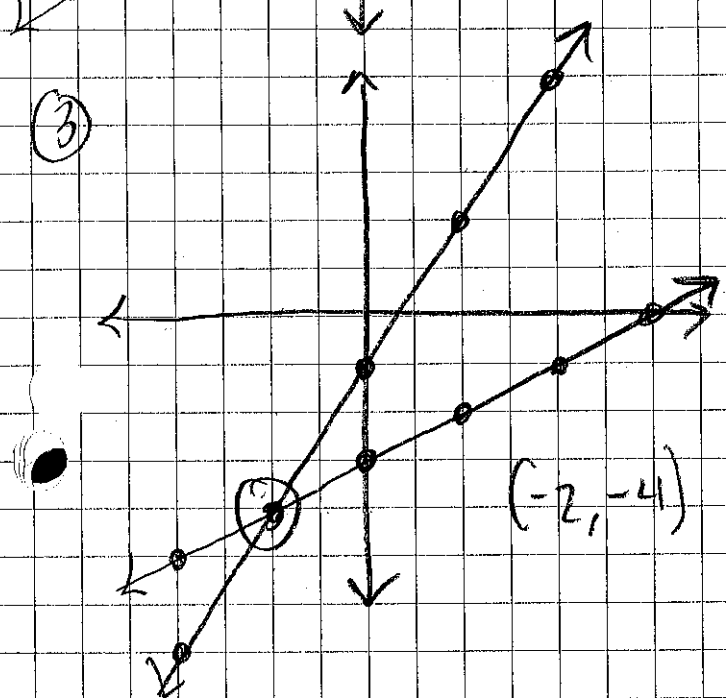
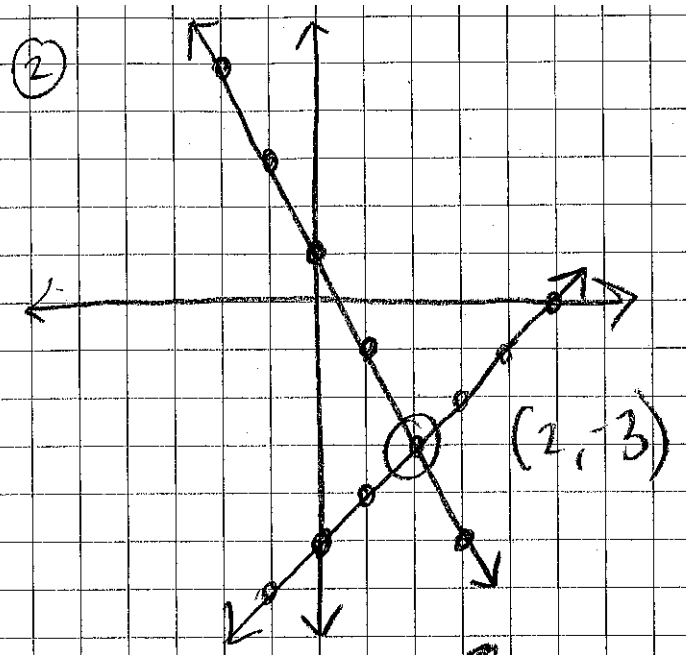
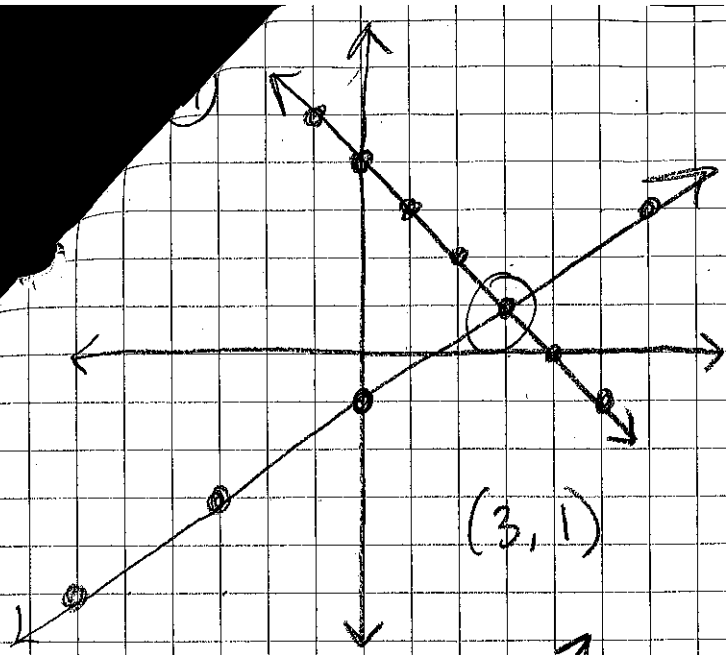
③  $x + y = 0$   
 $-x \quad -y$   
 $y = -x$   
 $3x + y = -4$   
 $-3x \quad -3x$   
 $y = -3x - 4$

⑥  $x = 3 - 3y$   
 $-3 \quad -3$   
 $\frac{x-3}{-3} = \frac{-3y}{-3}$   
 $-\frac{1}{3}x + 1 = y$   
 $x + 3y = -6$   
 $-x \quad -x$   
 $\frac{3y}{3} = \frac{-x-6}{3}$   
 $y = -\frac{1}{3}x - 2$

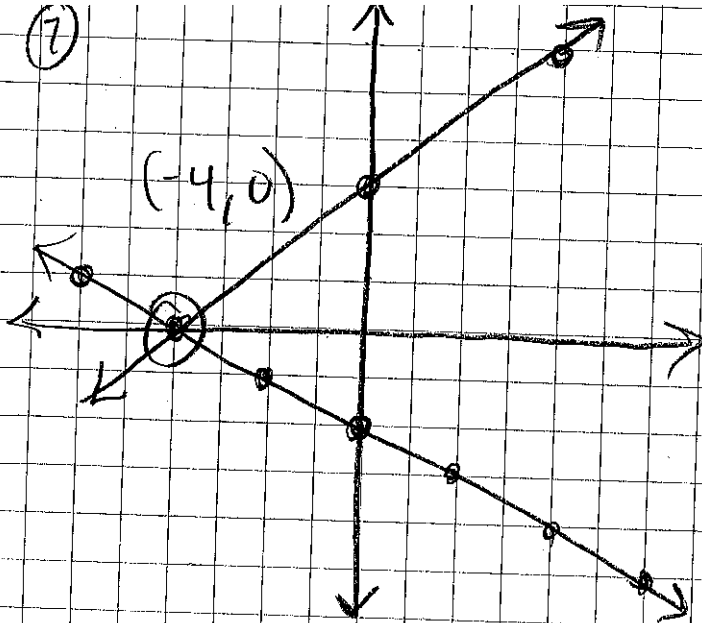
⑦  $x + 2y = -4$   
 $-x \quad -x$   
 $\frac{2y}{2} = \frac{-x-4}{2}$   
 $y = -\frac{1}{2}x - 2$   
 $4y = 3x + 12$   
 $\frac{4y}{4} = \frac{3x+12}{4}$   
 $y = \frac{3}{4}x + 3$

⑧  $2x - 5y = 20$   
 $-2x \quad -2x$   
 $\frac{-5y}{-5} = \frac{-2x+20}{-5}$   
 $y = \frac{2}{5}x - 4$

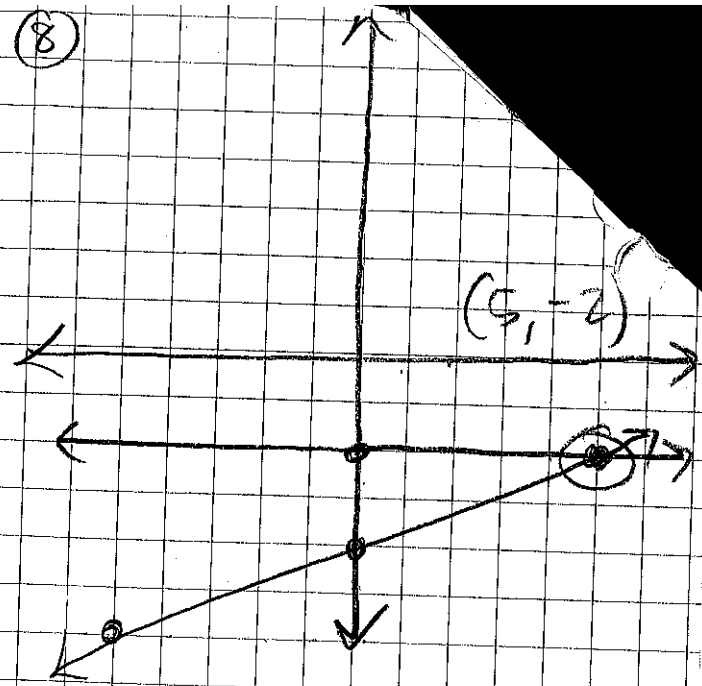
⑨  $4x + 3y = -15$   
 $-4x \quad -4x$   
 $\frac{3y}{3} = \frac{-4x-15}{3}$   
 $y = -\frac{4}{3}x - 5$



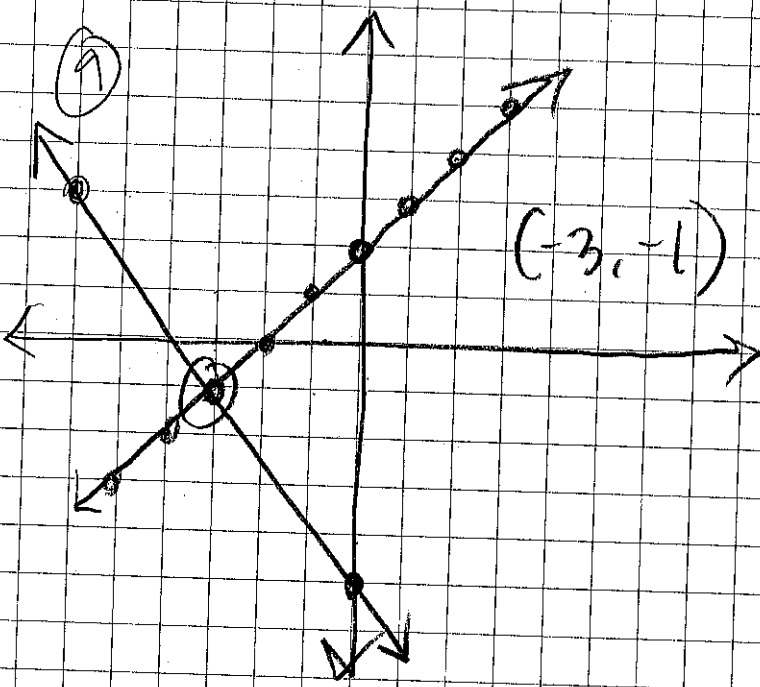
(7)



(8)



(9)

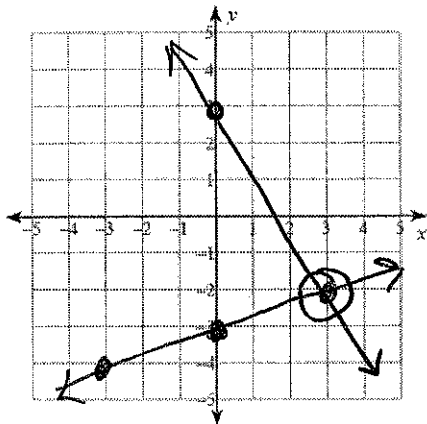


Solving Systems of Equations by Graphing

Solve each system by graphing.

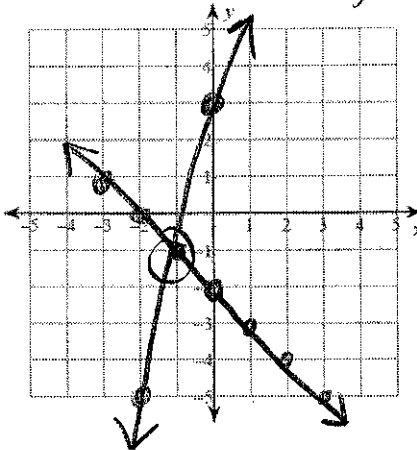
1)  $y = -\frac{5}{3}x + 3$

$y = \frac{1}{3}x - 3$  (3, -2)



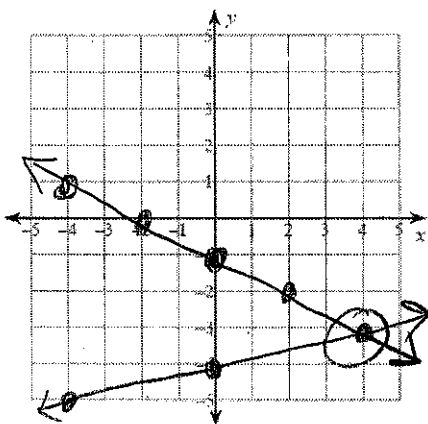
2)  $y = 4x + 3$   
 $y = -x - 2$

(-1, -1)



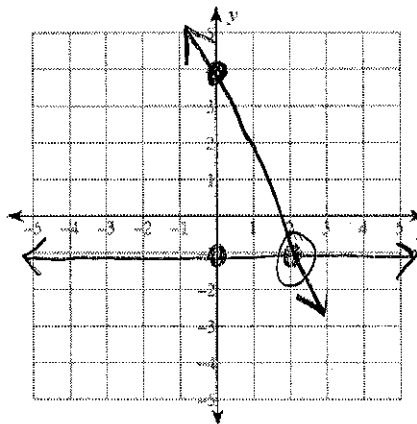
3)  $y = -\frac{1}{2}x - 1$

$y = \frac{1}{4}x - 4$  (4, -3)



4)  $y = -1$   
 $y = -\frac{5}{2}x + 4$

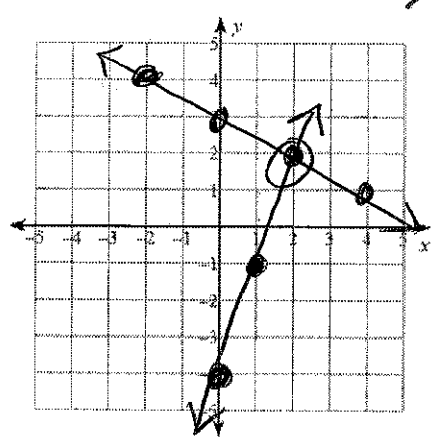
(2, -1)



$$y = 3x - 4$$

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

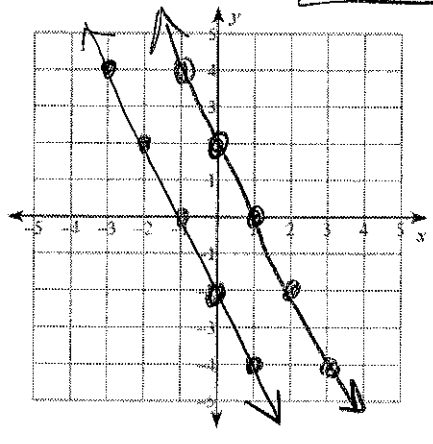
(2, 2)



$$6) y = -2x + 2$$

$$y = -2x - 2$$

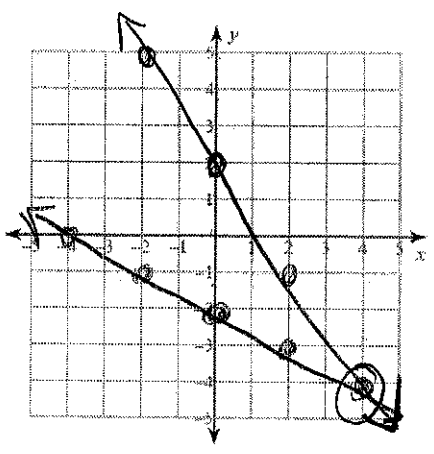
NO SOLUTION



$$7) y = -\frac{1}{2}x - 2$$

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

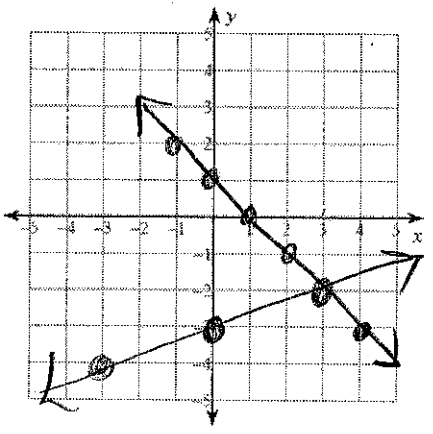
(4, -4)



$$8) y = \frac{1}{3}x - 3$$

$$y = -x + 1$$

(3, -2)



# SOLVING PROBLEMS WITH GRAPHS

Solve each problem by writing and graphing a system of equations that models the situation.

## Situation 1. ROCKET RIDE.

The Rocket Coaster has 10 cars, some that hold 4 people and some that hold 8 people. There is room for 56 people altogether. How many 4-passenger cars are there? How many 8-passenger cars are there?

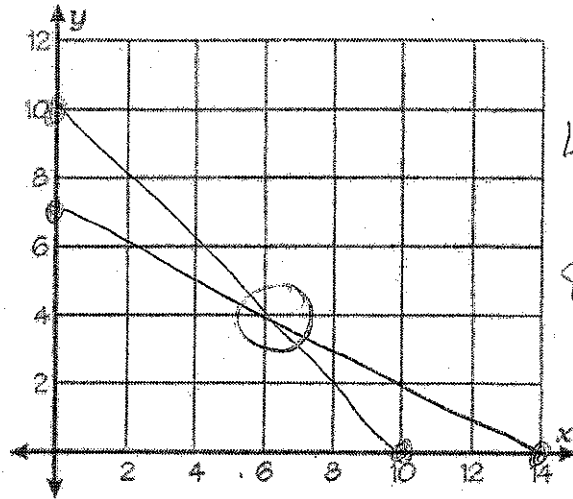
Let  $x$  = number of 4-passenger cars

Let  $y$  = number of 8-passenger cars

equation #1:  $x + y = 10$

equation #2:  $4x + 8y = 56$

Solution:  $(6, 4)$



$4x = 56$   
 $x = 14$   
 $8y = 56$   
 $y = 7$

## Situation 2. FUN, FUN, FUN.

The cost of admission to Funland Park was \$70 for a group of 2 adults and 5 children. The admission was \$84 for another group of 4 adults and 3 children. Find the admission price for each adult and each child.

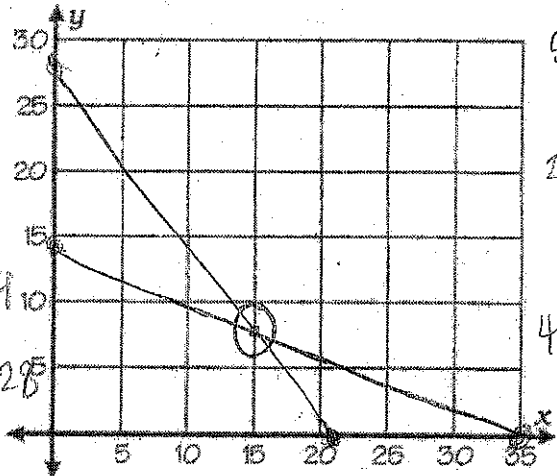
Let  $x$  = price of an adult's admission

Let  $y$  = price of a child's admission

equation #1:  $2x + 5y = 70 \rightarrow y = \frac{2}{5}x + 14$

equation #2:  $4x + 3y = 84 \rightarrow y = -\frac{4}{3}x + 28$

Solution:  $(15, 8)$



$5y = 70$   
 $y = 14$   
 $2x = 70$   
 $x = 35$   
 $4x = 84$   
 $x = 21$   
 $3y = 84$   
 $y = 28$

## Situation 3. HOW ABOUT A KISS?

The number of calories in a chocolate kiss is 20 less than the number of calories in a caramel cluster. Three kisses plus four clusters together have 360 calories. How many calories are in each?

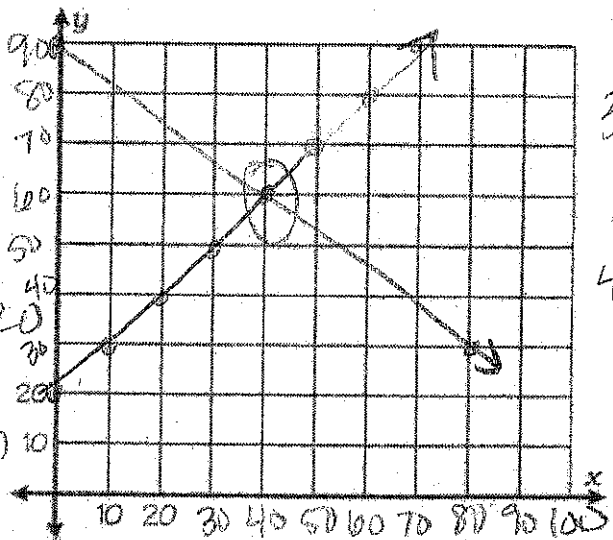
Let  $x$  = calories in a chocolate kiss

Let  $y$  = calories in a caramel cluster

equation #1:  $x = y - 20 \rightarrow y = x + 20$

equation #2:  $3x + 4y = 360$

Solution:  $(40, 100)$



$3x = 360$   
 $x = 120$   
 $4y = 360$   
 $y = 90$