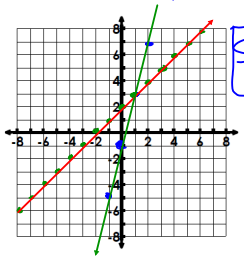
Review HW on Graphing Systems
#s 2, 4, 6, 8, 10

Yesterday's Homework

1. **Any questions?**
2. **Please take out your homework and exchange with your table partner for grading.**
   - **Make sure the homework is 100% complete.**

2) $\begin{cases} y = x + 2 \\ y = 4x - 1 \end{cases}$ $m = \frac{1}{1}$ $b = 2$ $m = \frac{4}{1}$ $b = -1$

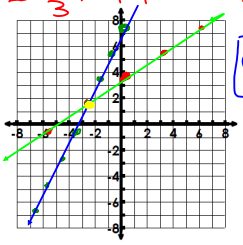


Solution: (1, 3)

4) $\begin{cases} y = 2x + 8 \\ -2x + 3y = 12 \end{cases}$ $m = \frac{2}{1}$ $b = 8$

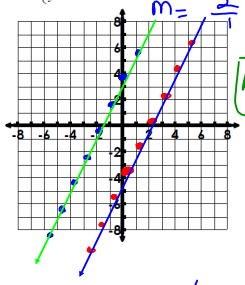
$-2x + 3y = 12$
$+2x \quad +2x$
$\frac{3y}{3} = \frac{2x + 12}{3}$

$y = \frac{2}{3}x + 4$ $m = \frac{2}{3}$ $b = 4$



(−3, 2)

6) $\begin{cases} y = 2x - 2 \\ y = 2x + 5 \end{cases}$ $m = \frac{2}{1}$ $b = -2$ $m = \frac{2}{1}$ $b = 5$



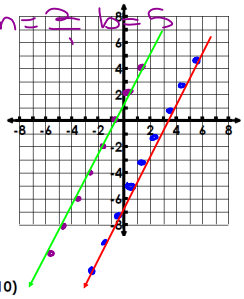
No Solution

Parallel lines

8) $\begin{cases} 2 + y = 2x \\ y - 2x = 5 \end{cases}$

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

$y - 2x = 5$
$+2x \quad +2x$
$y = 2x + 5$
$m = \frac{2}{1}$ $b = 5$



Parallel lines

No Solution

10)

x	$y = \frac{1}{2}x + 2$	$y = x + 4$
−6		
−4		
−2	−1	−2
0	0	0
	1	2
	2	4

Solution: (−4, 0)

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

Remediation over the Break

https://www.deltamath.com/

Assignments are due 12/18/12

Essential Question 11/15/17

How can I solve systems of equation by substitution?

Objective

I can solve system of equations by using substitution method.

4. $y = -x - 2$

$y = 4x + 3$

$-x - 2 = 4x + 3$

$-3 - 2 = 4x + x$

$\frac{-5}{5} = \frac{5x}{5}$

$-1 = x$

$y = 4(-1) + 3$

$y = -4 + 3$

$y = -1$

Solution: $(-1, -1)$

5. $x + y = 16$

$y = -x + 1$

$x + 1(-x + 1) = 16$

$x - 1x + 1 = 16$

$1 = 16$

False statement

No solution

6. $y = 3x - 7$

$3x - y = 7$

$3x - (3x - 7) = 7$

$3x - 3x + 7 = 7$

$7 = 7$

True!

Many solutions!

7. $y = -2x + 6$

$3x - y = 9$

$3x - (-2x + 6) = 9$

$3x + 2x - 6 = 9$

$5x - 6 = 9$

$+6 \quad +6$

$\frac{5x}{5} = \frac{15}{5}$ $x = 3$

$y = -2(3) + 6$

$y = -6 + 6$

$y = 0$

$(3, 0)$

8. $y = -6x - 3$

$y = -x + 2$

$-6x - 3 = -x + 2$

$-6x + x = 3 + 2$

$\frac{-5x}{-5} = \frac{5}{5}$

$x = -1$

$y = -(-1) + 2$

$y = 3$

$(-1, 3)$

9. $y = -3x + 25$

$-x + 2y = -20$

$-x + 2(-3x + 25) = -20$

$-x - 6x + 50 = -20$

$-7x + 50 = -20$

$-50 \quad -50$

$\frac{-7x}{-7} = \frac{-70}{-7}$

$x = 10$

$y = -3(10) + 25$

$y = -30 + 25$

$y = -5$

Solution: $(10, -5)$

10. $x = y - 4$

$x + 2y = 2$

$(y-4)+2y=2$

$y+2y-4=2$

$3y-4=2$

$+4 \quad +4$

$\frac{3y}{3} = \frac{6}{3}$

$y=2$

$x=2-4$

$x=-2$

Solution: $(-2, 2)$

Math Rap!!!

11/15/17

Summary of Methods Learned so Far

1) **Substitution:** Requires that one of the variables be isolated on one side of the equation. It is especially convenient when one of the variables has a coefficient of 1 or -1.

2) **Graphing:** Can provide a useful method for estimating a solution.

What is the Best Method Graphing or Substitution?

1. $y = 4x - 3$
   $5x - 2y = 6$

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

Best Method???

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

$y = -x + 1$

4. $3x - 2y = 6$

$y = 2x - 4$

$y = 2(2) - 4$

$y = 0$

$3x - 2(2x - 4) = 6$

$3x - 4x + 8 = 6$

$-1x + 8 = 6$

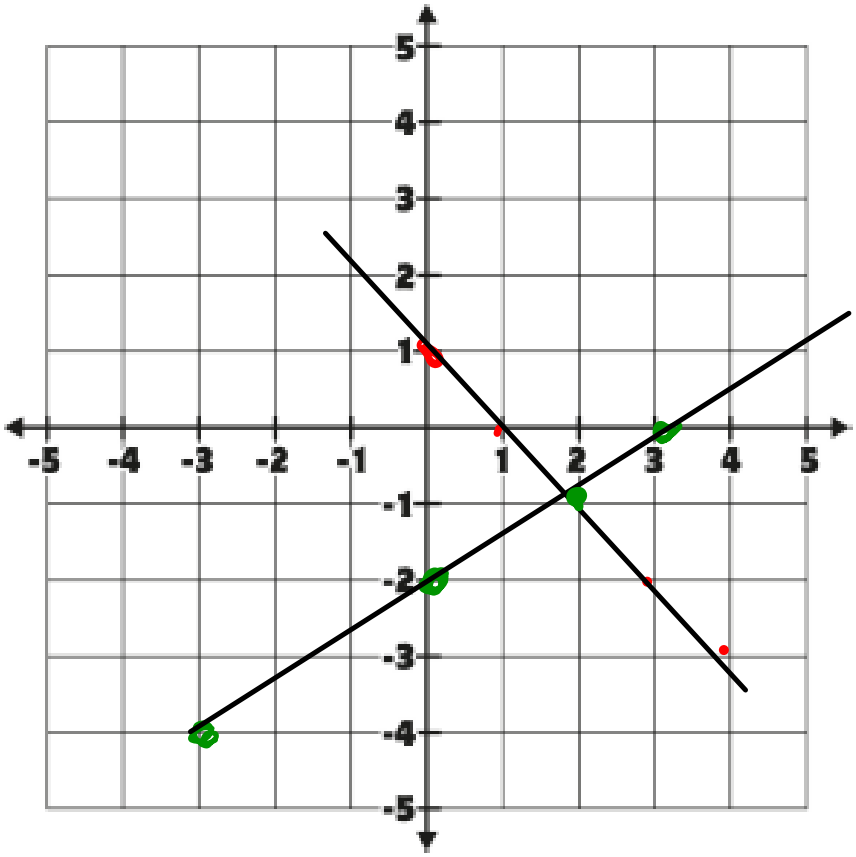
$-8 \quad -8$

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

$x = 2$

① $m = \frac{2}{3}$ $b = -2$

② $m = \frac{-1}{1}$ $b = 1$


5
4
3
2
1
-5
-4
-3
-2
-1
1
2
3
4
5
-1
-2
-3
-4
-5

Pop Quiz on Solving Systems of Equations by Graphing and Substitution.

Answer the 2 questions showing all work!!!

Creating and Solving Systems from Word Problems

1. You sell tickets for admission to your school play and collect a total of $104. Admission prices are $6 for adults and $4 for children. You sold 21 tickets. How many adult tickets and how many children tickets did you sell?

1.

Define variables:

x = # of adult tickets.

y = # of children tickets.

System of equations:

$x + y = 21$

$6x + 4y = 104$

Solve the system showing all steps

$x + y = 21$

$6x + 4y = 104$

$x = 21 - y$

$6(21 - y) + 4y = 104$

$126 - 6y + 4y = 104$

$126 - 2y = 104$

$-126 \quad -126$

$-2y = -22$

$\frac{-2y}{-2} = \frac{-22}{-2}$

$y = 11$

$x = 21 - 11$

$x = 10$

State your solution: (10, 11)

I sold 10 adult ticket and 11 childrens ticket

2. Your family goes to a restaurant for dinner. There are 6 people in your family. Some order the chicken dinner for $14.80 and some order the steak dinner for $17. If the total bill was $91, how many people ordered each type of dinner?

1.

Define variables:

x = # of pple ordered chicken

y = # of pple ordered steak.

System of equations:

$x + y = 6$

$14.80x + 17y = 91$

State your solution: $(5, 1)$

5 pple ordered chicken dinner and 1 person ordered steak dinner.

Solve the system showing all steps

$x + y = 6$

$y = 6 - x$

$14.80x + 17y = 91$

$14.80x + 17(6 - x) = 91$

$14.80x + 102 - 17x = 91$

$-2.2x = -11$

$\frac{-2.2x}{-2.2} = \frac{-11}{-2.2}$

$x = 5$

$y = 6 - 5$

$y = 1$

3. You bought the meat for Saturday's cookout. A package of hot dogs cost $1.60 and a package of hamburger cost $5. You bought a total of 8 packages of meat and you spent $23. How many packages of hamburger meat did you buy?

1.

Define variables:
x = # of hot dogs
y = # of hamburger

System of equations:
$x + y = 8$
$1.6x + 5y = 23$

Solve the system showing all steps
$x = 8 - y$
$1.6(8-y) + 5y = 23$
$12.8 - 1.6y + 5y = 23$
$3.4y = 10.2$
$\frac{3.4y}{3.4} = \frac{10.2}{3.4}$
$y = 3$
$x = 8 - 3$
$x = 5$

State your solution: (5, 3)
I bought 3 packages of hamburger.

4. Casey orders 3 pizzas and 2 orders of breadsticks for a total of $29.50. Rachel orders 2 pizzas and 3 orders of breadsticks for a total of $23. How much does a pizza cost?

1.

Define variables:
X = cost of pizza
Y = cost of breadsticks

System of equations:
$3x + 2y = 29.50$
$2x + 3y = 23$

State your solution: (14.50, 2)
A pizza cost $14.50

Solve the system showing all steps

$3x + 2y = 29.50$
$2x + 3y = 23$

$2x + 3y = 23$

$\frac{2x}{2} = \frac{23 - 3y}{2}$

$x = \frac{23 - 3y}{2}$

$3\left(\frac{23 - 3y}{2}\right) + 2y = 29.50$

$\frac{69}{2} - \frac{9y}{2} + 2y = 29.50$

$34.50 - 4.5y + 2y = 29.50$

$34.50 - 2.50y = 29.50$

$-34.50 \quad -34.50$

$\frac{-2.50y}{-2.50} = \frac{-5}{-2.50}$

$y = 2$

$x = \frac{23 - 3(-2)}{2}$

$x = \frac{23 + 6}{2} = \frac{29}{2}$

$x = 14.50$

5. Rent-A-Car rents compact cars for a fixed amount per day plus a fixed amount for each mile driven. Benito rented a car for 6 days, drove it 550 miles, and spent $337. Lisa rented the same car for 3 days, drove it 350 miles, and spend $185. What is the charge per day and the charge per mile for the compact car?

1.

Define variables:
X= charge per day
y= charge per mile

System of equations:
$6x+550y=337$
$3x+350y=185$

State your solution: (36, 0.22)
The charge per day is $36 and the charge per mile for the compact car's is $0.22 cents.

Solve the system showing all steps

$3x+350y=185$

$\frac{3x}{3}=\frac{185-350y}{3}$

$x=\frac{185-350y}{3}$

$6\left(\frac{185-350y}{3}\right)+550y=337$

$\frac{1110}{3}-700y+550y=337$

$370-150y=337$

$-370 \quad -370$

$\frac{-150y}{-150}=\frac{-33}{-150}$

$y=0.22$

$x=\frac{185}{3}-\frac{350(.22)}{3}$

$x=61.67-25.67$

$x=36$

6. Beach Hotel in Cancun is offering two weekend specials. One includes a 2-night stay with 3 meals and cost $195. The other includes a 3-night stay with 5 meals and cost $300. What is the cost of a single meal?

1.

Define variables:
X = cost of meal
y = # of nights

System of equations:
$3x+2y=195$
$5x+3y=300$

State your solution: (15.15, 74.75)
The cost of a single meal is $15.15.

Solve the system showing all steps

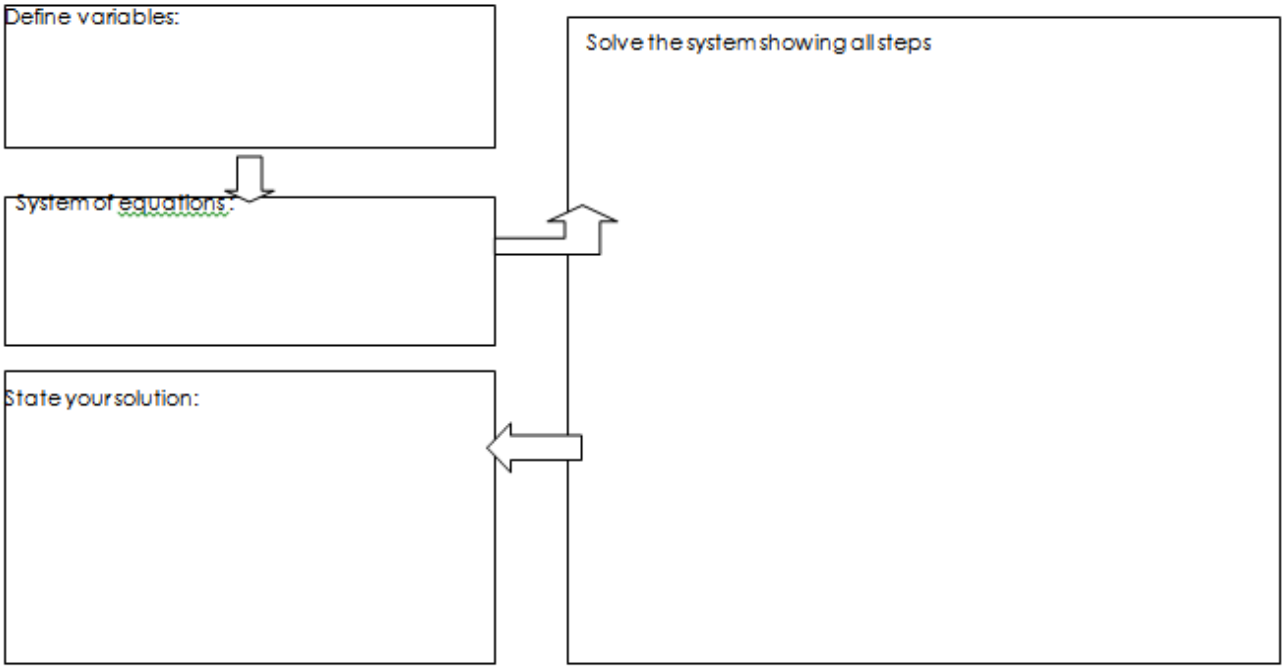
$5x+3y=300$
$-5x \quad -5x$
$\frac{3y}{3}=\frac{300-5x}{3}$
$y=100-\frac{5}{3}x$

$3x+2\left(100-\frac{5}{3}x\right)=195$
$3x+200-\frac{10x}{3}=195$
$-200 \quad -200$
$\frac{-0.33x}{0.33}=\frac{-5}{0.33}$
$x=15.15$

$y=100-\frac{5}{3}(15.15)$
$y=100-25.25$
$y=74.75$

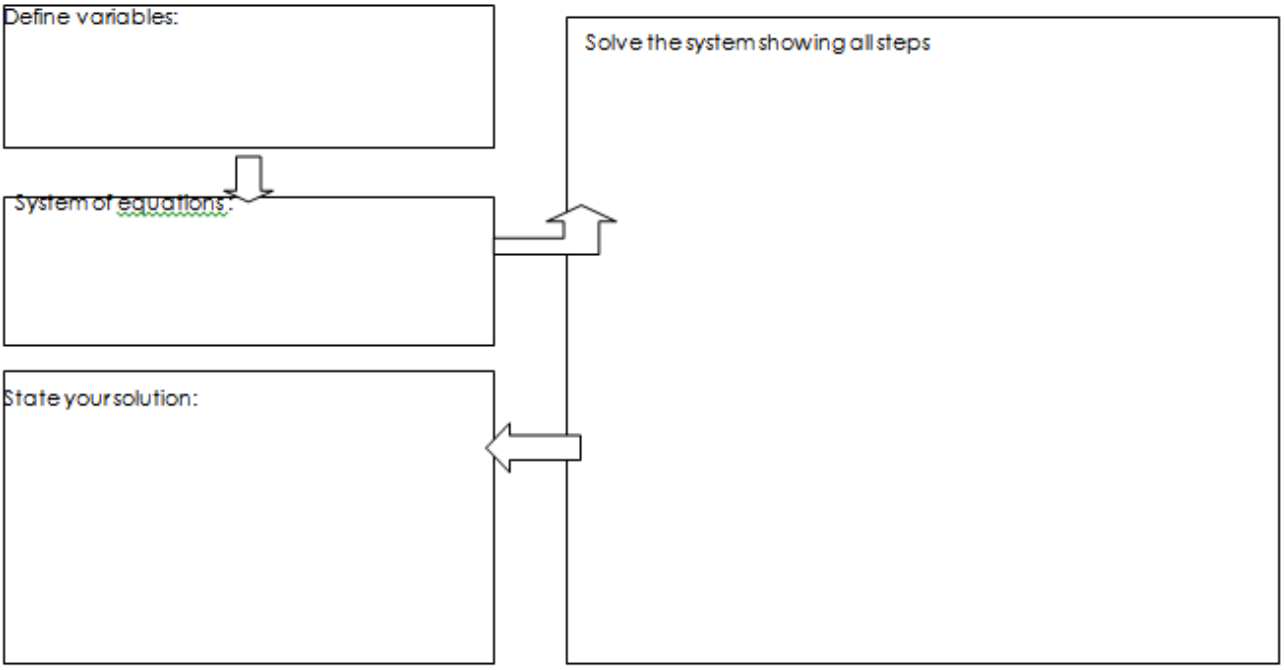
7. You and your friend go to a Mexican restaurant. You order 2 tacos and 2 enchiladas. Your friend orders 3 tacos and 1 enchilada. Your bill was $4.80. Your friend's bill was $4.00. What was the price of an enchilada?

1.



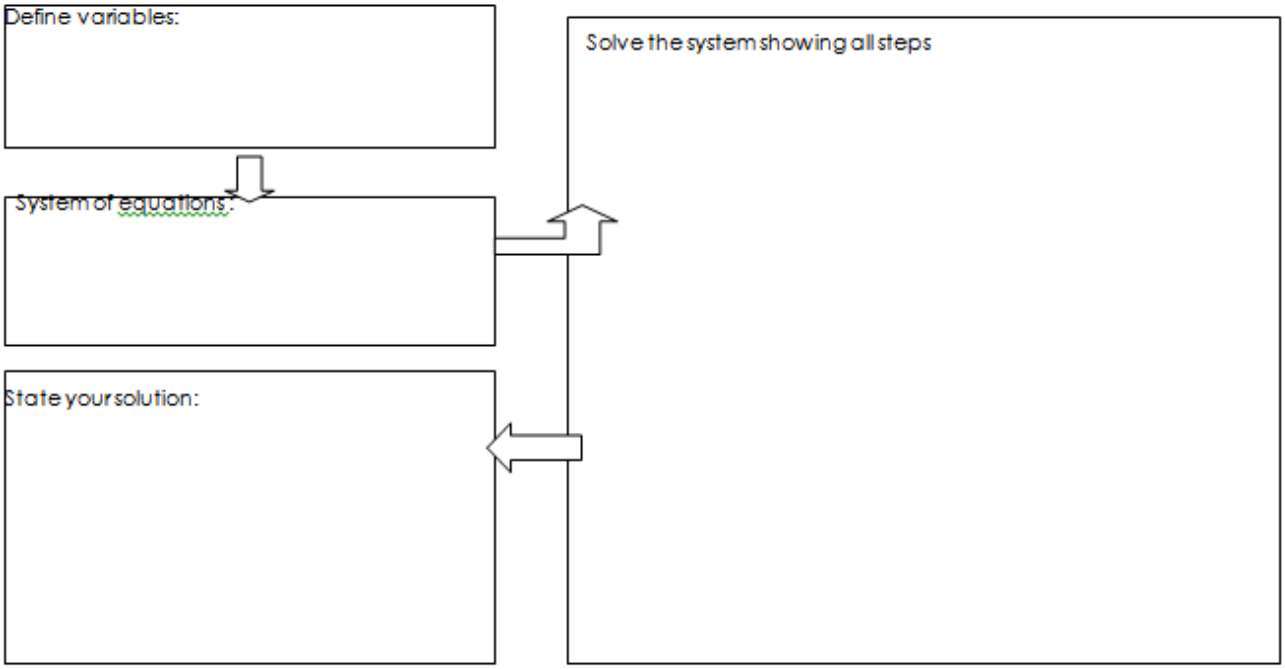
8. F or a community bake sale, you purchases 12 pounds of sugar and 15 pounds of flour. Your total cost was $9.30. The next day, you purchased 4 pounds of sugar and 10 pounds of flour. Your total cost the second day was $4.60. Find the cost of a pound of sugar and a pound of flour.

1.



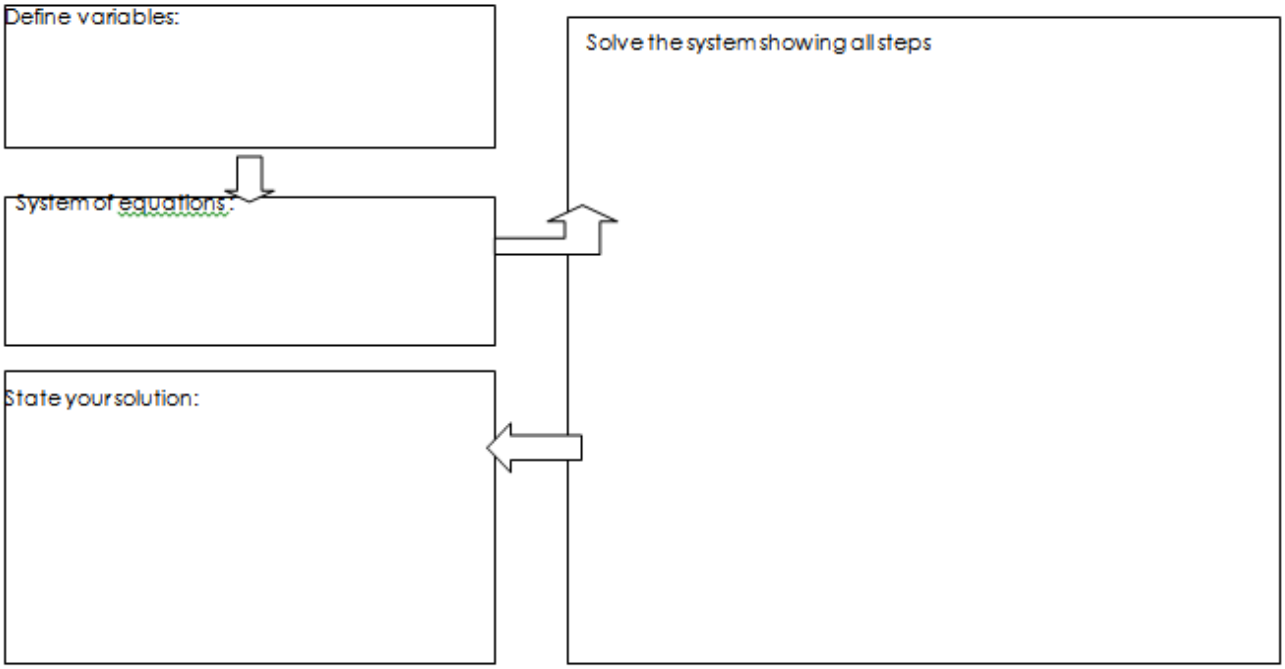
9. A travel agency offers different getaways to New York. Plan A includes hotel accommodations for 3-nights and 2-pair of baseball tickets for $645. Plan B includes hotel accommodations for 5-nights and 4-pairs of baseball tickets for $1135. How much does a single hotel cost and how much does a single pair of baseball tickets cost?

1.



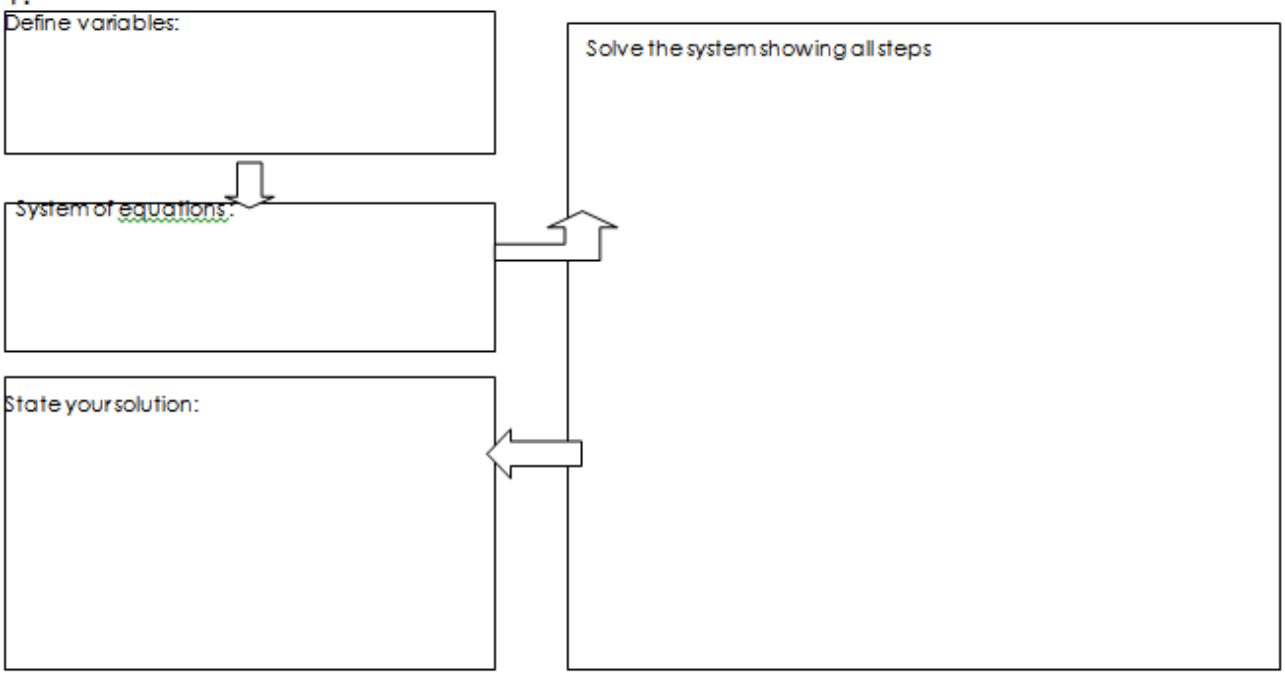
10. Tickets for the theater are $5 for the balcony and $10 for the orchestra. If 600 tickets were sold and the total receipts were $4750, how many tickets of each type were sold?

1.



11. You bought 5 pairs of socks for $19. The wool socks you bought cost $5 per pair. The cotton socks you bought cost $3 per pair. How many of each type of sock did you buy?

1.



12. A sporting good store sells right-handed and left-handed baseball gloves. In one month, 12 gloves were sold for a total revenue of $528. Right-handed gloves cost $48 and left-handed gloves cost $36. How many right-handed gloves were sold?

1.