Bell Work   4/8/2015

Have out your work from yesterday:

Apple Charter vs. City Charter

Solve the following:

$$\frac{1}{2}(6x-4) = 3x + 12 - 11x - 9$$

$$3x - 2 = -8x + 3$$
$$+2 +2$$

$$3x = -8x + 5$$
$$+8x +8x$$

$$\frac{11x}{11} = \frac{5}{11}$$

$$\boxed{x = \frac{5}{11}}$$

Daily trips to NYC at 6 a.m. and 10 a.m.

APPLE CHARTER Bus Company

● $400 booking fee
● $10 per student

CITY CHARTER Bus Line

★ Low $200 booking fee
★ $15 per student
★ Travel at 7 a.m. or NOON daily !

Travel to **NYC!**

1. Which bus company plan do you think is the better deal? Explain why you think so.

2. Complete the table below.

Cost Comparison

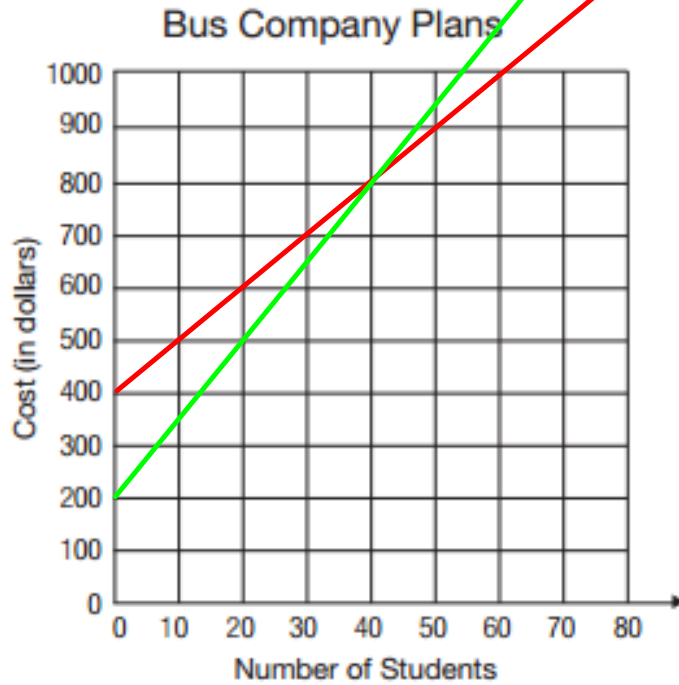| Number of Students	Apple Charter	City Charter
5	450	275
15	550	425
25	650	575
35	750	725
45	850	875

3. Now use the table to describe which bus company you think is the better deal, and compare it to your answer in question 1.

< 45 students $\rightarrow$ City

> 45 students $\rightarrow$ Apple

4. On the grid in the next column, use two different colors
   to graph the cost of 5, 15, 25, 35, and 45 students.
   Use one color to represent the Apple Charter Bus
   Company and another color for the City Charter Bus
   Line to NY City.

Bus Company Plans

Cost (in dollars)

Number of Students

5. Describe in words how to find the cost of using Apple ~~booking fee~~
Charter Bus Company with any number of students:
The cost will equal __$400__ plus __$10 per__
__Student__   cost per student

6. Use variables and numbers to write an equation that describes the cost of using Apple Charter Bus Company with any number of students. Let *C* represent the cost and *s* the number of students:

$$C = \underline{10s + 400} \quad \text{Apple}$$

7. Use the same procedure that you followed in questions 5 and 6 to write an equation that describes the cost of using City Charter Bus Line with any number of students. Let *C* represent the cost and *s* the number of students.

$$C = \underline{200 + 15s} \quad \text{City}$$

8. Use the equations that you wrote to find the cost for transporting 23 students with each bus company. $\text{Apple} \quad 10(23) + 400$

Apple : $630

City : $545 $\text{City} \quad 200 + 15(23)$

9. Use the equations that you wrote to find the cost of 68 students with each bus company.

Apple : $1,080 → 10(68) + 400

City : $1220 → 15(68) + 200

10. What do the answers to questions 8 and 9 tell you about which bus company has the better deal?

Depends on how many students are traveling

11.) 42 students

$$830 = 15(\textcircled{s}) + 200$$
$$\underline{-200} \qquad \underline{-200}$$
$$\frac{630}{15} = \frac{15s}{15} \qquad \boxed{s = 43}$$

12.) Graph - more accurate

Table - rough estimate

13.) 43 students

14.) 40 students
$800

Intersection
Point

15.)

16.) Apple: 41 or more students

City: 1 -> 39 students.

System of Equations:

When you have more
than one equation.

Solution to a system of equations is
where the 2 equations equal
each other.
└▷ their intersection point.

Graphing Around the Room

There are 10 graphs located around the room (A through J)

You are to go to each graph and answer the question in the corresponding box on your paper.

A   The graphs and equations below compare the costs of two
taxi cab companies. What is the solution to this system of
equations and what does it mean in context?

Yellow Cab VS Blue Cab
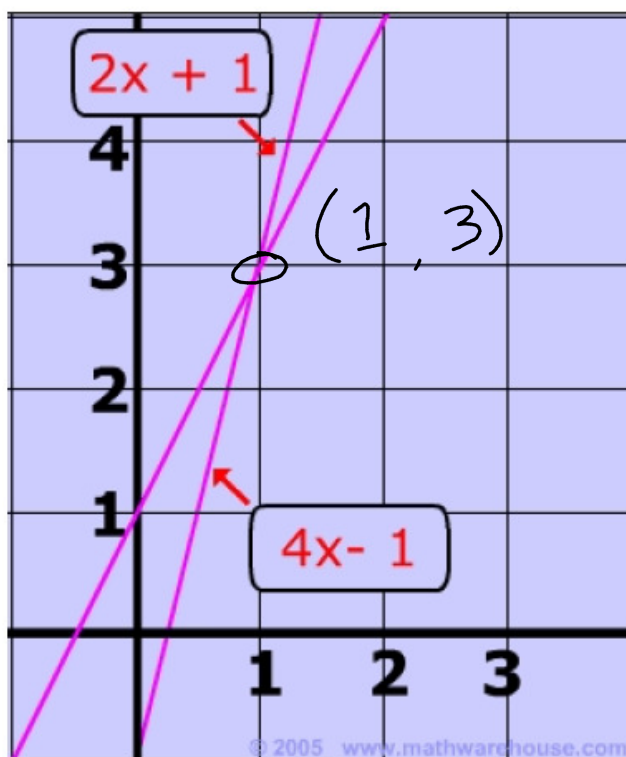
$8 for 3 miles

The Total Cost / The number of miles
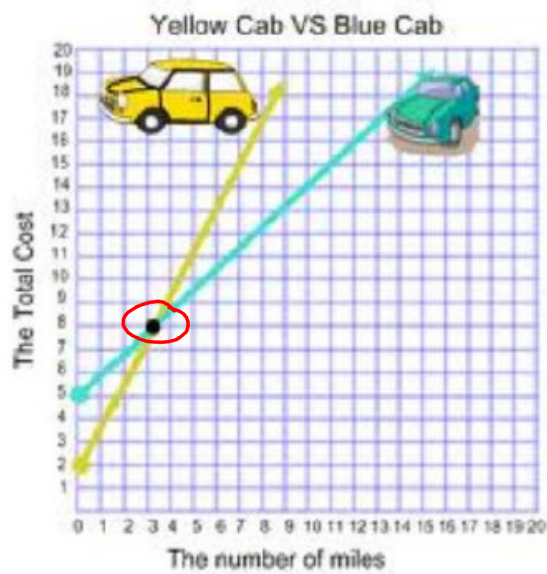
Yellow Cab: $3x - 7y = 6$

Blue Cab: $y = 1x + 5$

B

Find the solution to the system of equations graphed below.

2x + 1

(1 , 3)

4x- 1
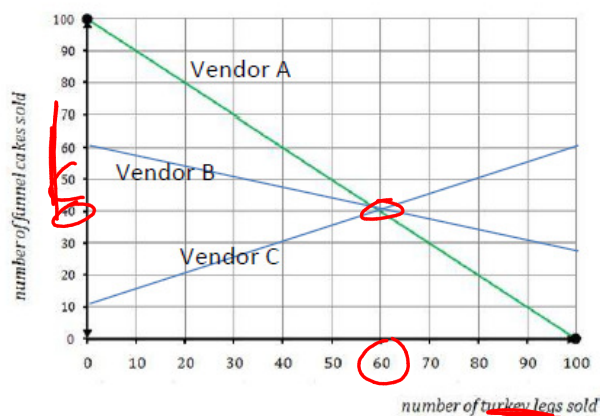
4
3
2
1

1 2 3

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C

Find the solution to the system of equations graphed below.
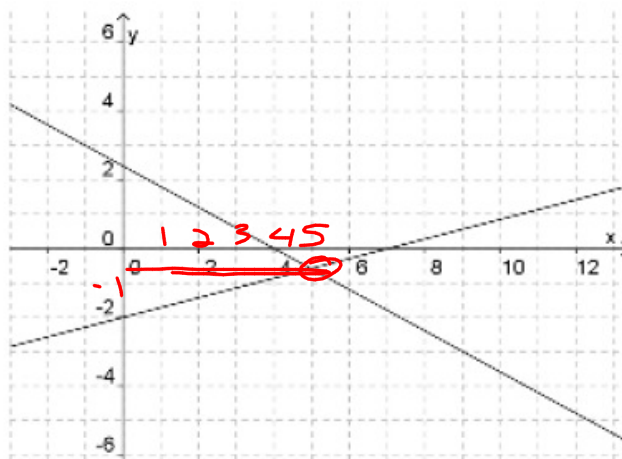
A. (4, -1)
B. (-1, 4)
C. (5, - ½)
D. (- ½ , 5)

D

The graphs and equations below compare the turkey leg and funnel cake sales of three state fair food vendors. What is the solution to this system of equations and what does it mean in context?

Vendor A: y = 100 − x

Vendor B: y = 60 - 1/3x

Vendor C: y = 10 + 1/2x

E   The graphs and equations below compare the costs of tw
prepaid photo companies. What is the solution to this
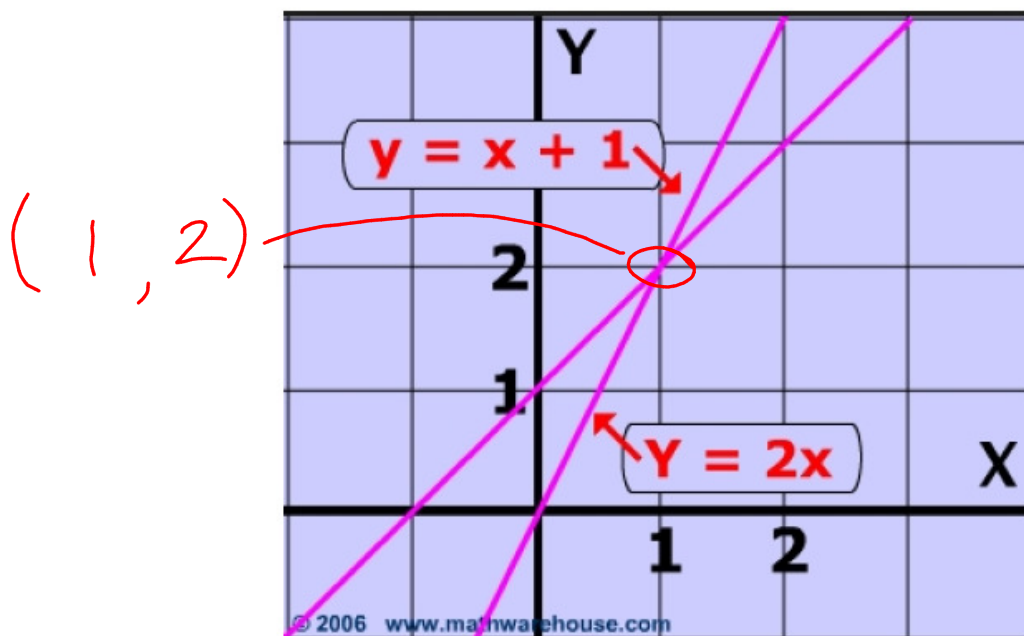system of equations and what does it mean in context?

Company Z: $2y - x = 30$

Company S: $y = \dfrac{3}{2}x + 5$

A.   After 0 minutes, both companies cost the same.
B.   After 50 minutes, both companies will cost $25.
C.   After 10 minutes, both companies will cost $20.
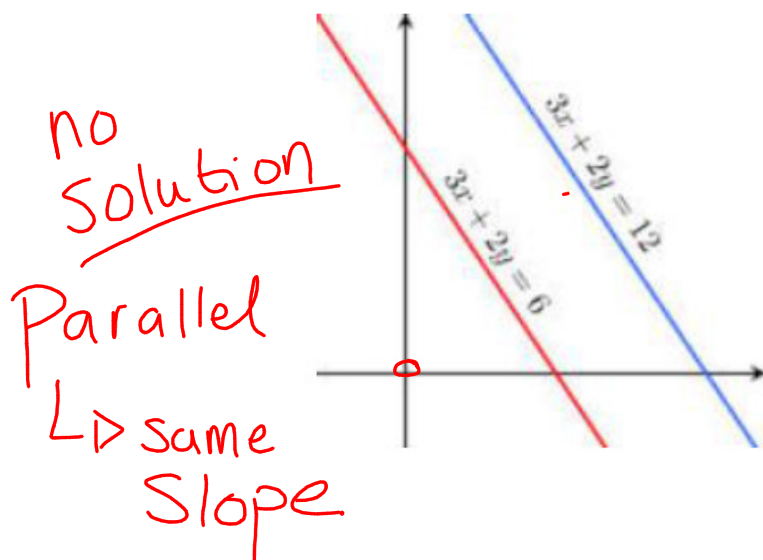D.   After 20 minutes, both companies will cost $10

F

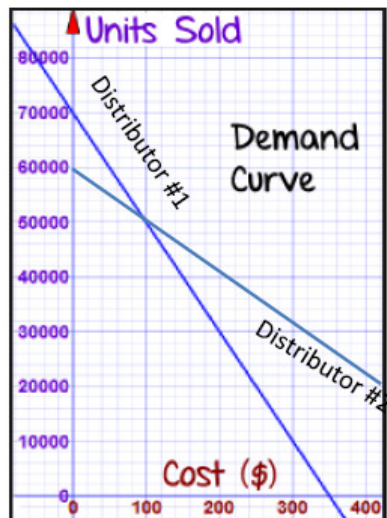Find the solution of the system of equations graphed below.

$y = x + 1$

$(1, 2)$

$Y = 2x$

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G

Find the solution to the system of equations graphed below.

no
Solution

Parallel

$\llcorner \triangleright$ same
Slope

$3x + 2y = 12$

$3x + 2y = 6$

H.

The graphs and equations below compare the demand curve of two distributors. What is the solution to this system of equations and what does it mean in context?


A. Distributor 1 and Distributor 2 will both sell 80000 units when the cost is $400.

B. Distributor 1 and Distributor 2 will both sell 400 units when the cost is $80000.

C. Distributor 1 and Distributor 2 will both sell 50000 units when the cost is $100.

D. Distributor 1 and Distributor 2 will both sell 100 units when the cost is $50000.

Distributor #1: $y = 70000 - 200x$

Distributor #2: $y = 60000 - 100x$

The graphs and equations below compare the total distance traveled of two truck drivers. What is the solution to this system of equations and what does it mean in context?
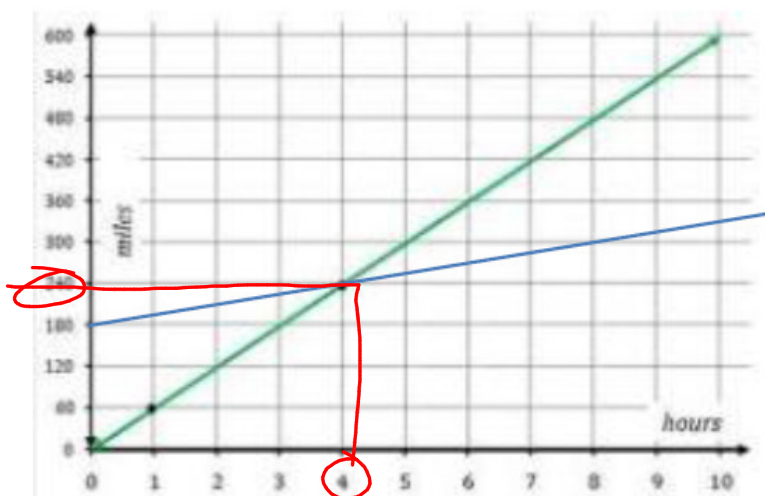
A. Both drivers have driven 240 miles after 4 hours.

B. Both drivers have driven 4 miles after 240 hours.

C. Both drivers have driven 600 miles after 10 hours.

D. Both drivers have driven 10 miles after 600 hours.

J

Find the solution of the system of equations graphed below.

(3, 1)