


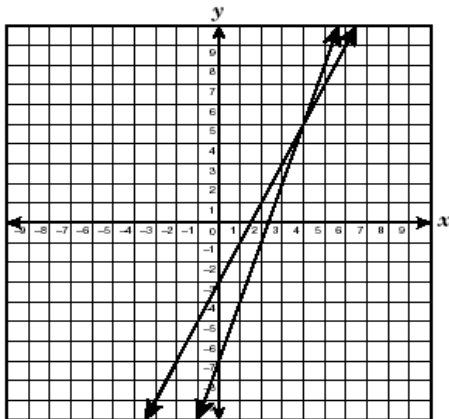
NAME AND CLASS PERIOD \_\_\_\_\_

<p>1.</p> <p>The length of a rectangle is equal to triple the width. Which system of equations can be used to find the dimensions of the rectangle if the perimeter is 85 centimeters?</p> <p><b>F</b> <math>l = w + 3</math> <math>2(l + w) = 85</math></p> <p><b>G</b> <math>l = 3w</math> <math>2l + 6w = 85</math></p> <p><b>H</b> <math>l = 3w</math> <math>2(l + w) = 85</math></p> <p><b>J</b> <math>l = w + 3</math> <math>2l + 6w = 85</math></p>	<p>The formula for perimeter of a rectangle.  <math>P = 2L + 2W</math> given <math>P = 85</math>                  So, <math>85 =</math> _____                  This is the same as <math>85 = 2(\quad)</math>                  This eliminates answers ___ and ___  <math>L =</math> _____                  That eliminates answers ___ and ___                  What is left? _____</p> <p>When a problem is discussing shapes always draw a picture!</p> <div style="text-align: center;">  </div>
<p>2.</p> <p>Chase and Sara went to the candy store. Chase bought 5 pieces of fudge and 3 pieces of bubble gum for a total of \$5.70. Sara bought 2 pieces of fudge and 10 pieces of bubble gum for a total of \$3.60. Which system of equations could be used to determine the cost of 1 piece of fudge, <math>f</math>, and 1 piece of bubble gum, <math>g</math>?</p> <p><b>F</b> <math>5f + 3g = 3.60</math> <math>2f + 10g = 5.70</math></p> <p><b>G</b> <math>5f + 2g = 5.70</math> <math>3f + 10g = 3.60</math></p> <p><b>H</b> <math>f + g = 22</math> <math>7f + 13g = 9.30</math></p> <p><b>J</b> <math>5f + 3g = 5.70</math> <math>2f + 10g = 3.60</math></p>	<p>Chase bought _____ fudge and _____ gum for \$_____</p> <p>Write it down as an equation:                  _____</p> <p>Sara bought _____ fudge and _____ gum for \$3.60</p> <p>Write it down as an equation:                  _____</p>
<p>3.</p> <p>Marcos had 15 coins in nickels and quarters. He had 3 more quarters than nickels. He wrote a system of equations to represent this situation, letting <math>x</math> represent the number of nickels and <math>y</math> represent the number of quarters. Then he solved the system by graphing. What is the solution?</p> <p><b>A</b> (6, 9)  <b>B</b> (5, 10)  <b>C</b> (9, 6)  <b>D</b> (10, 5)</p>	<p><i>Let's use some logic:</i></p> <p>Here are the relationships that are given:  <math>N + Q = 15</math>    <math>Q = N + 3</math>    or  <math>x + y = 15</math>        <math>y = x + 3</math></p> <p>Check and see if <math>x</math> and <math>y</math> adds up to 15 in each answer.</p> <p>He has 3 more quarters than nickels. If <math>x</math> is nickels, which answer shows nickels and 3 more quarters than nickels? _____</p>

<p>4.</p> <p>Ms. Kitts works at a music store. Last week she sold 6 more than 3 times the number of CDs that she sold this week. Ms. Kitts sold a total of 108 CDs over the 2 weeks. Which system of equations can be used to find <math>l</math>, the number of CDs she sold last week, and <math>t</math>, the number of CDs she sold this week?</p> <p><b>A</b> <math>l + t = 108</math> <math>t = 3l + 6</math></p> <p><b>B</b> <math>l + t = 108</math> <math>t = 3l - 6</math></p> <p><b>C</b> <math>l + t = 108</math> <math>l = 3t - 6</math></p> <p><b>D</b> <math>l + t = 108</math> <math>l = 3t + 6</math></p>	<p><math>l</math> = LAST WEEK      <math>t</math> = THIS WEEK</p> <p>Last week PLUS this week she sold _____ CDS.</p> <p>SO <math>l + t =</math> _____ This did not help Last week = 6 more than 3 times as many as this week.</p> <p>We need an equation that starts with <math>l</math> = Eliminate ___ and ___ Six more means addition or subtraction? _____</p> <p>Only one answer left has a <math>+6</math>. _____</p>
<p>5.</p> <p>Hector and Martha recently collected 32 new stamps. If Hector gives four of his new stamps to Martha, Martha will have three times as many new stamps as Hector. Which system of equations would allow you to calculate the number of new stamps Hector and Martha each have?</p> <p><b>A</b> <math>h + m = 32</math> <math>3(h - 4) = m + 4</math></p> <p><b>B</b> <math>h + m = 32</math> <math>h - 4 = m + 4</math></p> <p><b>C</b> <math>h = 32m</math> <math>h - 4 = 3(m + 4)</math></p> <p><b>D</b> <math>h - m = 32</math> <math>3(h - 4) = m + 4</math></p>	<p>Hector (<math>h</math>) and Martha (<math>m</math>) collected _____ stamps, so <math>h + m =</math> _____</p> <p>Eliminate answers _____ and _____.</p> <p>If Hector gives Martha 4 stamps, do you add or subtract them from Hector? _____ Then do you add or subtract them to Martha? _____</p> <p>So Hector has _____ stamps. (in terms of "<math>h</math>", not a number)</p> <p>Martha will have 3 times as many as Hector. Which answer has 3 times and many as Hector. _____</p>
<p>6.</p> <p>The Frosty Ice-Cream Shop sells sundaes for \$2 and banana splits for \$3. On a hot summer day, the shop sold 8 more sundaes than banana splits and made \$156. Which system of equations could be used to find the number of sundaes, <math>s</math>, and banana splits, <math>b</math>, that the shop sold that day?</p> <p><b>A</b> <math>2s + 3b = 156</math> <math>s = b + 8</math></p> <p><b>B</b> <math>2b + 3s = 156</math> <math>s + b = 8</math></p> <p><b>C</b> <math>2s + 3b = 8</math> <math>s = b + 156</math></p> <p><b>D</b> <math>2s + 3b = 156</math> <math>b - s = 8</math></p>	<p>How much are sundaes? _____ How much are banana splits? _____ Sundaes are represented by what letter? _____ So, if we want to know how much was spent on sundaes we would write _____ Banana splits are represented by what letter? _____ So, if we want to know how much was spent on banana splits we would write _____</p> <p>The total price sundaes and banana splits sold was \$ _____ How many more sundaes were sold than banana splits? _____</p> <ul style="list-style-type: none"> <li>• So, sundaes = banana splits + _____.</li> <li>• Write this equation. _____</li> <li>• Also, sundaes plus banana splits = \$ _____.</li> <li>• Write this equation. _____</li> <li>• _____</li> <li>• What is the answer? _____</li> </ul>

7.

The graphs of the linear equations  $y = 2x - 3$  and  $y = 3x - 7$  are shown below.



If  $2x - 3 = 3x - 7$ , what is the value of  $x$ ?

- F 4
- G 5
- H 9
- J 10

8.

The student council at Jefferson High School sold a total of 220 brownies and cookies during its fund-raiser. Each brownie sold for \$0.75, and each cookie sold for \$0.50. The student council made \$136.50 from the sales of brownies and cookies. Which system of linear equations can be used to find  $b$ , the number of brownies sold, and  $c$ , the number of cookies sold?

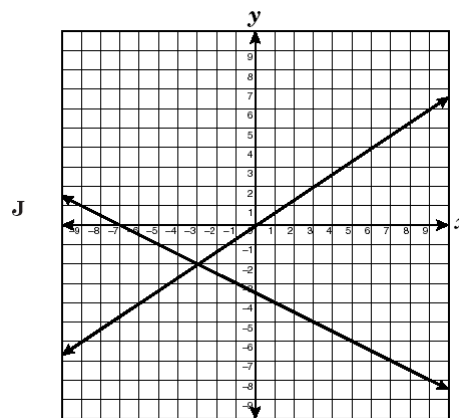
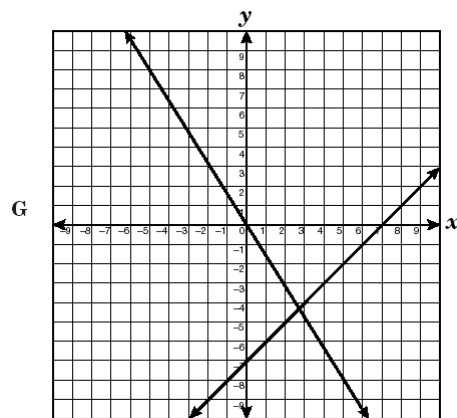
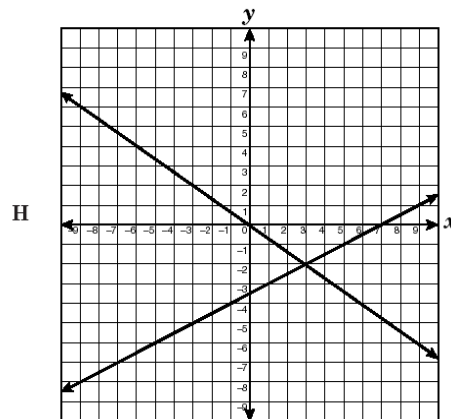
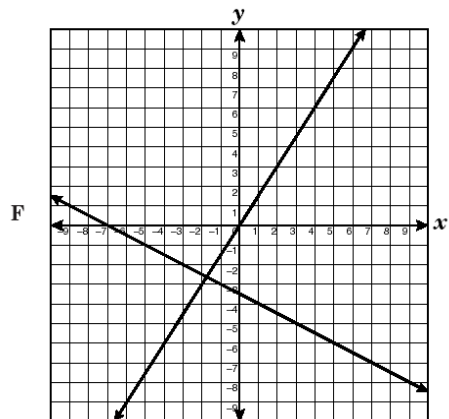
- A  $b + c = 220$   
 $0.50b + 0.75c = 136.50$
- B  $b + c = 136.50$   
 $0.75b + 0.50c = 220$
- C  $b + c = 136.50$   
 $0.50b + 0.75c = 220$
- D  $b + c = 220$   
 $0.75b + 0.50c = 136.50$

9.

Which graph best represents a solution to this system of equations?

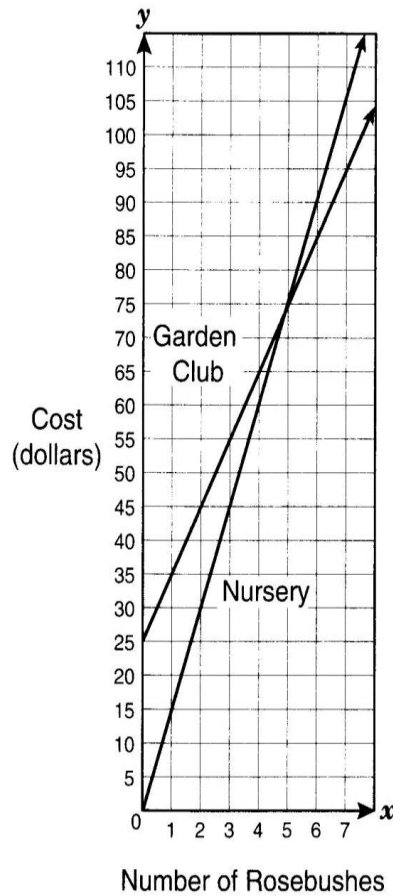
$$2x - 3y = 0$$

$$x + 2y = -7$$



10

Larry is considering joining the Garden Club. If he pays a \$25 membership fee, he can buy rosebushes from the club at a reduced price of \$10 each. If he does not join the club, he can buy rosebushes from a local nursery for \$15 each. The graph below compares the cost of buying rosebushes from the Garden Club and from the local nursery.



How many rosebushes will Larry have to buy from the Garden Club before he would begin to save money?

- A 25
- B 5
- C 75
- D 7

 Answer Key: page 289

The answer has to be 75 or 5. Why?

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But while we are here, what is the equation for the Garden club?

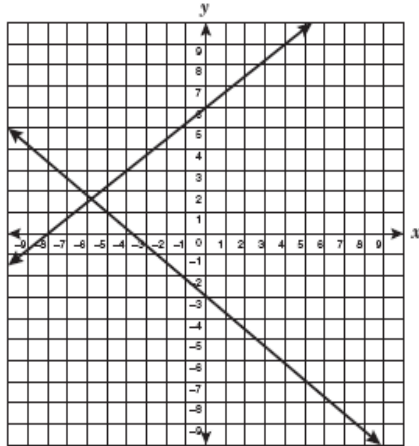
Y = \_\_\_\_\_

What is the equation for the local nursery?

Y = \_\_\_\_\_

11.

9 Look at the system of linear equations graphed on the coordinate grid below.



Which of the following is closest to the solution to this system of linear equations?

- A  $(-5\frac{1}{2}, 2\frac{1}{4})$
- B  $(-5\frac{3}{4}, 1\frac{2}{3})$
- C  $(-6\frac{1}{4}, 1\frac{3}{4})$
- D  $(-5\frac{2}{3}, \frac{3}{4})$

Circle the intersection of the two lines.

What is the x coordinate? \_\_\_\_\_

What is the y coordinate? \_\_\_\_\_

What is the answer? \_\_\_\_\_

12.

Jesse had a collection of baseball cards. He gave 10 cards to his little brother and equally divided the remaining cards among himself and 3 of his friends. He then had 15 cards. How many baseball cards did Jesse originally have in his collection?

- F 20
- G 50
- H 70
- J 100

Brain teaser. Work backward. Show work

13.

Which of the following best describes the graph of the equations below?

$$2y = 3x + 2$$

$$4y = 6x + 1$$

- F The lines have the same y-intercept.
- G The lines have the same x-intercept.
- H The lines are perpendicular.
- J The lines are parallel.

Use your linear knowledge, solve each equation for y and look at the slopes and the y intercepts and GRAPH them on the calculator!!!!!!!!!!!!

14.

A school district held a meeting for all its physical education teachers. The number of women attending was 5 more than twice the number of men attending. A total of 53 teachers attended the meeting. Which system of equations could be used to find  $w$ , the number of women, and  $m$ , the number of men, at this meeting?

A  $m = 2w + 5$

$$w + m = 53$$

B  $2w + m = 5$

$$w + m = 53$$

C  $w = m + 5$

$$w + m = 53$$

D  $w = 2m + 5$

$$w + m = 53$$

I don't think it will help knowing that

$$m + w = 53.$$

How would you write "twice the number of men" \_\_\_\_\_

Then add 5 to that and you get

\_\_\_\_\_

Sort of solves the problem.

15.

At a linen sale Mrs. Green bought twice as many pillowcases for \$2 each as sheets for \$5 each. If she spent less than \$40, not including tax, what is the maximum number of pillowcases she could have purchased?

A 3

B 8

C 6

D 4

16.

At a college bookstore, Carla purchased a math textbook and a novel that cost a total of \$54, not including tax. If the price of the math textbook,  $m$ , is \$8 more than 3 times the price of the novel,  $n$ , which system of linear equations could be used to determine the price of each book?

F  $m + n = 8$

$$m = 3n + 54$$

G  $m + n = 8$

$$m = 3n - 54$$

H  $m + n = 54$

$$m = 3n + 8$$

J  $m + n = 54$

$$m = 3n - 8$$

Write an equation for the cost of the text and the novel:

$$58 = \underline{\hspace{2cm}}$$

That should eliminate answers \_\_\_\_ and \_\_\_\_

Write an equation for the cost of the math book:

$$m = \underline{\hspace{2cm}}$$

17.  
What is the  $x$ -coordinate of the solution to the system of linear equations below?

$$\begin{aligned}4x + 5y &= 8 \\2x - 3y &= -18\end{aligned}$$

- F** -4
- G** -3
- H** 3
- J** 4

. Multiply equation #2 by  $-2$  and solve

18.

The price,  $e$ , of an entertainment system at Extreme Electronics is \$220 less than twice the price,  $u$ , of the same system at Ultra Electronics. The difference in price between the system at Extreme Electronics and Ultra Electronics is \$175. Which system of linear equations can be used to determine the price of the system at each store?

A  $2e - u = 220$   
 $e - u = -175$

B  $2e - u = 220$   
 $e + u = 175$

C  $2e - 2u = 440$   
 $e - u = -175$

D  $e - 2u = -220$   
 $e - u = 175$

We get three choices:

$$e - u = 175$$

$$e + u = 175$$

$$e - u = -175$$

What does difference mean? \_\_\_\_\_

So which one can we eliminate? \_\_\_\_\_

Is there any reason that the difference between two prices would be  $-175$ ? \_\_\_\_\_

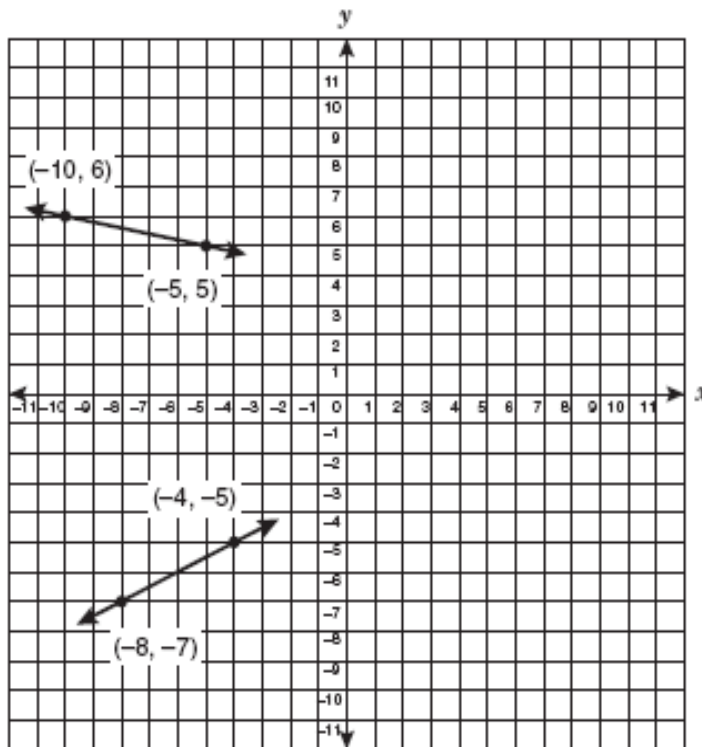
Write an equation for the cost of "e":

$$e = \underline{\hspace{2cm}}$$

What does this match the given equation in the answer? \_\_\_\_\_

19.

The graph of a system of linear equations is shown below.



Which of the following is the solution to this system of linear equations?

- F  $(0, 4)$
- G  $(8, 1)$
- H  $(0, -3)$
- J  $(10, 2)$

**Hint: Use a very careful straight edge to find the intersection. or stair-step up and down the slopes to find the intersection.**



**In Class Project**

NAME and CLASS PD \_\_\_\_\_

NOW WE ARE GOING TO SOLVE SOME OF THE SYSTEMS OF EQUATIONS THAT WERE PRESENTED IN THESE TAKS PROBLEMS. (SKIP #11, 12, 13, 15, 18, and 19)

<p>1.</p> <ul style="list-style-type: none"> <li>• Equation One _____</li> <li>• Equation Two _____</li> <li>• Use Substitution or Elimination? _____</li> <li>• Show all work</li> </ul>        <ul style="list-style-type: none"> <li>• Answer: Length = _____ Width= _____</li> </ul>	<p>3.</p> <ul style="list-style-type: none"> <li>• Equation One _____</li> <li>• Equation Two _____</li> <li>• Use Substitution or Elimination? _____</li> <li>• Show all work</li> </ul>        <ul style="list-style-type: none"> <li>• Answer Nickels _____ Quarters _____</li> </ul>
<p>2.</p> <ul style="list-style-type: none"> <li>• Equation One _____</li> <li>• Equation Two _____</li> <li>• Use Substitution or Elimination? _____</li> <li>• Show all work</li> </ul>        <ul style="list-style-type: none"> <li>• Answer: Fudge Costs _____ Gum Costs: _____</li> </ul>	<p>4.</p> <ul style="list-style-type: none"> <li>• Equation One _____</li> <li>• Equation Two _____</li> <li>• Use Substitution or Elimination? _____</li> <li>• Show all work</li> </ul>        <ul style="list-style-type: none"> <li>• Answer: last week _____ This week: _____</li> </ul>

5.

- Equation One \_\_\_\_\_
- Equation Two \_\_\_\_\_
- Use Substitution or Elimination?  
\_\_\_\_\_
- Show all work

• Answer: =Hector \_\_\_\_\_  
Martha= \_\_\_\_\_

7.

- Equation One \_\_\_\_\_
- Equation Two \_\_\_\_\_
- Use Substitution or Elimination?  
\_\_\_\_\_
- Show all work

Answer X= \_\_\_\_\_ Y= \_\_\_\_\_

6.

- Equation One \_\_\_\_\_
- Equation Two \_\_\_\_\_
- Use Substitution or Elimination?  
\_\_\_\_\_
- Show all work

Answer: Sundaes \_\_\_\_\_ Banana Splits: \_\_\_\_\_

8. Equation One

- \_\_\_\_\_
- Equation Two \_\_\_\_\_
- Use Substitution or Elimination?  
\_\_\_\_\_
- Show all work

• Answer: Brownies \_\_\_\_\_ Cookies: \_\_\_\_\_

- 9. Equation One \_\_\_\_\_
- Equation Two \_\_\_\_\_
- Use Substitution or Elimination?  
\_\_\_\_\_
- Show all work

Answer: X = \_\_\_\_\_ Y= \_\_\_\_\_

- **14.** Equation One \_\_\_\_\_
- Equation Two \_\_\_\_\_
- Use Substitution or Elimination?  
\_\_\_\_\_
- Show all work

- Answer Men \_\_\_\_\_ Women \_\_\_\_\_

- **10.** Equation One \_\_\_\_\_
- Equation Two \_\_\_\_\_
- Use Substitution or Elimination?  
\_\_\_\_\_
- Show all work

- Answer: Cost \_\_\_\_\_ Bushes: \_\_\_\_\_

- **16.** Equation One \_\_\_\_\_
- Equation Two \_\_\_\_\_
- Use Substitution or Elimination?  
\_\_\_\_\_
- Show all work

- Answer: Novels \_\_\_\_\_ Math Text  
: \_\_\_\_\_