

January 22, 2019 Tuesday

Rewrite each equation in terms of the indicated (letter).

7) $V = \frac{1}{3}Bh$ (h) 8) $A = \frac{a+b+c}{3}$ (c)

For each equation, identify the slope and y-intercept.

12) $3 + 2x = y$ $y = mx + b$

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

Rewrite each equation into slope-intercept form.

18) $8x = 16 + 2y$

$8x - 16 = 2y$
 $\frac{8x - 16}{2} = \frac{2y}{2}$
 $4x - 8 = y$ OR $y = 4x - 8$

$3V = Bh$
 $\frac{3V}{B} = \frac{Bh}{B}$
 $\frac{3V}{B} = h$
 $3A = a + b + c$
 $\frac{3A - a}{3} = \frac{a + b + c - a}{3}$
 $\frac{3A - a}{3} = \frac{b + c}{3}$
 $3A - a = b + c$

Jan 17-1:58 PM

Unit 1 test review...

2) "simplified"
 $22x^3 + 14x^2 + 3x + 7 - 12x^3 + 5x$
 $(0x^3) + (14x^2) + (8x) + (4)$ c) 4

7) $P1 = x = x$ $x + y = 121$
 $P2 = y = x + 13$ $x + x + 13 = 121$
 $x + x = 108$
 $\frac{2x}{2} = \frac{108}{2}$
 $x = 54$ $B = 54$

15) $22721 \text{ ft} \left(\frac{1 \text{ mi}}{5280 \text{ ft}} \right) = 4.3 \text{ mi}$ D

16) $8x^3 + x$
 Terms: 2 = binomial a
 Degree: 3 = cubic

31) $\frac{2 \text{ yd}}{1 \text{ hr}} \left(\frac{3 \text{ ft}}{1 \text{ yd}} \right) \left(\frac{1 \text{ hr}}{60 \text{ min}} \right) = 6 \frac{\text{ft}}{\text{min}}$

Jan 22-10:41 AM

GSE Algebra I

Name: _____ Date: _____ Unit 2A SG

Solve for the indicated variable.

1. $A = 5y + \frac{y}{5}$ (y)
 $-5x - 5x$
 $A - 5x = y$

A. $y = \frac{A}{5x}$
 B. $y = \frac{A-x}{5}$
 C. $y = \frac{1}{4x+5x}$
 D. $y = A - 5x$

2. $A = \frac{E}{C}$ (M)
 $TE = M$
 $CE = M$
 $ET = M$
 $EC = M$

3. Justify the missing step.

Equation	Steps
$12 = 5x - 18$	Original
$30 = 5x$	Addition Prop. of Equality
$6 = x$	Division Prop. of Equality

4. Justify the missing step.

Equation	Steps
$3(x+1) = 12 + 5$	Original
$3x + 3 = 17 + 5$	Subst. Property of Equality
$3x + 3 = 22$	Subst. Property of Equality
$x = 7$	Division Property of Equality

5. Identify the slope and y-intercept, then graph.

$y = 2x - 4$
 $m = \frac{2}{1}$ rise
 $b = -4$ 4st

Jan 17-2:03 PM

GSE Algebra I

Name: _____ Date: _____ Unit 2A SG

6. The formula $P = 2L + 2W$ tells the perimeter of a package.

a) Solve the equation $P = 2L + 2W$ for L .
 $P - 2W = 2L$
 $\frac{P - 2W}{2} = \frac{2L}{2}$
 $\frac{P - 2W}{2} = L$

b) What is the length of a package that has a perimeter of 20 cm and a width of 5?

$\frac{20 - 2(5)}{2} = L$
 $\frac{20 - 10}{2} = L$
 $\frac{10}{2} = L$
 $5 = L$

7. Rewrite the equation into slope-intercept form: $y + 6 = -12x - 6x$
 $y = -18x - 6$

8. Rewrite the equation into slope-intercept form. Then graph the line.
 $y - 3 = 0$
 $y = 3$

9. Write a linear equation to model the following situation:
 Joe has 7 times as many shirts as Mark. Joe and Mark have 140 shirts.

$J = 7M$
 $J + M = 140$
 $7M + M = 140$
 $8M = 140$

Jan 17-2:04 PM

Applications of Standard to Slope-Intercept Form

1. You are in charge of buying the hamburger and chicken for a party. You have \$60 to spend. The hamburger costs \$2 per pound and chicken is \$3 per pound.

a. Write an equation that represents the different amounts of hamburger, x , and chicken, y , that you can buy.

b. Rewrite the equation into slope-intercept form.

c. Graph the function.

d. If you buy 15 pounds of hamburger, how many pounds of chicken can you buy?

e. List three different combinations of hamburgers and chickens you can buy.

Jan 17-2:05 PM

2. You are buying \$48 worth of lawn seed that consists of two types of seed. One type is a quick-growing eye grass that costs \$4 per pound, and the other type is a higher-quality seed that costs \$6 per pound.

a. Write an equation that represents the different amounts of \$4 seed, x , and \$6 seed, y , that you can buy.

b. Rewrite the equation into slope-intercept form.

c. Graph the function.

d. If you buy 3 pounds of \$4 seed, how many pounds \$6 seed can you buy?

e. List three different combinations of seed combinations.

Jan 17-2:05 PM

January 23, 2019, Wednesday

1) Identify the property of equality that justifies each missing step or equation in each of the following tables.

Equation	Given	Steps
1. $-6a - 1 = -95$		
2. $\frac{1}{6} + 5 = -95$		
3. $\frac{1}{6} = -96$		

Handwritten notes: $-6a = 90$, $a = 15$, $a = 15$, $a = 15$

2) Write each equation in slope-intercept form. Then graph the line.

22) $2x + 4y = -6$

Handwritten work: $y = -\frac{1}{2}x - \frac{3}{2}$, $2x + 4y = -6$, $4y = -2x - 6$, $y = -\frac{2x - 6}{4}$, $y = -\frac{2x}{4} + \frac{6}{4}$, $y = -\frac{1}{2}x + \frac{3}{2}$

3) Rewrite each equation into slope-intercept form.

Handwritten work: $2y = 8x + 14$, $y = \frac{8x + 14}{2}$, $y = \frac{8x}{2} + \frac{14}{2}$, $y = 4x + 7$

Graphs of $y = -\frac{1}{2}x - \frac{3}{2}$ and $y = 4x + 7$ are shown.

Jan 17-2:05 PM

GSE Algebra I Name: _____ Unit 2A Date: _____ Notes

Solving Systems by Graphing

Steps

- Make sure each equation is in slope-intercept form: $y = mx + b$.
- Graph each equation on the same graph paper.
- The point where the lines intersect is the solution. If they don't intersect then there's no solution.
- Check your solution algebraically!

Handwritten examples:

1. $2x - 2y = 8$, $2x + 2y = 4$
 $m = -1$, $b = -4$ and $m = -1$, $b = 2$
 Graphs show two parallel lines with no solution.

2. $y = -2x + 5$, $y = -2x + 1$
 $m = -2$, $b = 5$ and $m = -2$, $b = 1$
 Graphs show two parallel lines with no solution.

3. $y = -x + 2$, $y = -x + 8$
 $m = -1$, $b = 2$ and $m = -1$, $b = 8$
 Graphs show two parallel lines with no solution.

4. $y = -x + 2$, $y = 2x + 1$
 $m = -1$, $b = 2$ and $m = 2$, $b = 1$
 Graphs show two intersecting lines with one solution at $(-1, 3)$.

Types of solutions:

- If the lines have the same y-intercept and the same slope m , then the system has **infinite solutions**.
- If the lines have the same slope m , but different y-intercepts b , the system has **No Solution**.
- If the lines have different slopes m , the system has **one solution**.

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Solving Systems by Substitution

Steps

- One equation will have either x or y by itself, or can be solved for x or y easily.
- Substitute the expression from Step 1 into the other equation and solve for the other variable.
- Substitute the value from Step 2 into the equation from Step 1 and solve.
- Your solution is the ordered pair formed by x & y.
- Check the solution in each of the original equations.

Handwritten examples:

1. $3x - 4y = 20$, $2x + 2y = 20$
 Solution: $(4, 10)$

2. $3x + 2y = 16$, $y = x - 1$
 Solution: $(2, 1)$

3. $3(-5y + 4) + 15y = -1$
 $-15y + 12 + 15y = -1$
 $12 = -1$
No solution

4. $2x - 3y = 10$, $x = \frac{1}{2}(2y - 3)$
 Solution: $(-6, 4)$

5. $2(-4y + 8) - 5y = 29$
 $-8y + 16 - 5y = 29$
 $-13y = 13$
 $y = -1$
 Solution: $(-6, 4)$

6. $2(-4y + 8) - 5y = 29$
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13. $2(-4y + 8) - 5y = 29$
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100. $2(-4y + 8) - 5y = 29$
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Jan 17-2:11 PM

Solving Systems by Elimination

Steps

- Arrange the equations with like terms in columns.
- Multiply, if necessary, to create opposite coefficients for one variable.
- Add/subtract the equations.
- Substitute the value to solve for the other variable.
- Write your answer as an ordered pair.
- Check your answer.

Handwritten examples:

1. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(4, 0)$

2. $2x + 2y = 4$, $2x + 2y = 8$
 Solution: $(2, 1)$

3. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

4. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

5. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

6. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

7. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

8. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

9. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

10. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

11. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

12. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

13. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

14. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

15. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

16. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

17. $2x + 2y = 4$, $2x + 2y = 4$
 Solution: $(2, 1)$

GSE Algebra I Unit 2A Systems Practice
 Name: _____ Date: _____

I. Determine if (2, 1) is a solution to the following systems. Answer yes or no!

1) $x - y = 1$
 $3x + y = -5$

2) $-4x + 3y = -5$
 $-x - y = -3$

II. For 3-6, solve each system graphically. Write your solution in the blank provided. Check each solution.

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

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

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GSE Algebra I Unit 2A Systems Practice
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5) $2x + y = 6$
 $-4x + 2y = 4$

6) $y = 3$
 $x = -6$

III. Solve each linear system using substitution.

7) $y = x + 4$
 $2x + y = 19$

8) $y = -3x + 3$
 $7x + 2y = 1$

9) $y = 2x + 3$
 $2x + 3y = 5$

10) $x + 2y = 1$
 $5x + 3y = -23$

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IV. Solve each linear system using elimination.

11) $2x + y = 11$
 $x + y = 9$

12) $x - y = 7$
 $2x + y = -10$

13) $3x + y = 1$
 $2x + 3y = -11$

14) $3x + 2y = 6$
 $2x - 3y = 17$

Find the error and solve the problem correctly.

15)

$$\begin{array}{r} 5x + 8y = 1 \\ -2x + 8y = 6 \\ \hline 7x = 7 \\ \hline x = 1 \\ -2(1) + 8y = -6 \\ 2 + 8y = -6 \\ -2 \quad -2 \\ \hline 8y = -8 \\ \hline y = -1 \end{array}$$

(1, -1)

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GSE Algebra I Unit 2A Classroom
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Systems of Linear Equations – Word Problems

5-Step Method:

1. Define variables
2. Write the system of equations
3. Solve showing all steps
4. Check your answer
5. State your solution in sentence form

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?

2. Your family goes to a restaurant for dinner. There are 6 people in your family. Some order the chicken dinner for \$14.99 and some order the steak dinner for \$17. If the total bill was \$91, how many people ordered each type of dinner?

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?

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4. Crazy 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?

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 450 miles, and spent \$337. Lisa rented the same car for 3 days, drove 130 miles, and spent \$183. What is the charge per day and the charge per mile for the compact car?

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?

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