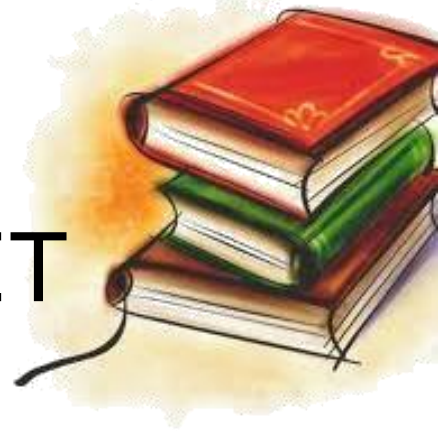


ALGEBRA 1

SUMMER PACKET



STUDENT NAME: _____

DUE DATE: September 9- 13,2019

Summer Resource Contact:

sjavaid@roselleschools.org

lspreitzer@roselleschools.org

kdaniel@roselleschools.org ;

STUDENT RESPONSIBILITIES

I will be able to improve my own math performance by:

- Completing the summer math packet
- Reviewing math skills throughout the summer

Student Signature

Current Grade

Date Received

PARENT RESPONSIBILITIES

Parents will be able to promote student success in math by:

- Supporting the math goal of Abraham Clark High School
- Monitoring student completion of the summer math Packet
- Encouraging student use of math concepts in summer activities

Parent Signature

Date Received

Date Reviewed

ACHS – ENTERING ALGEBRA 1 – SUMMER 2018

Name: _____

ALGEBRA 1 SUMMER PACKET

Welcome to Algebra!! Please have the following worksheets completed and ready to be handed in on the given due date:

Due Date:

September 9 – 13, 2019

It is expected that you have a good understanding of this material coming into these courses so you can be successful from the very beginning. Teachers will not be doing an extensive review of previously learned material. Each section has supporting examples to help you with the given practice problems. If you need further assistance, additional resources/websites are provided to you in the appendix section (at the end of this packet). Please refer to these sites to help review whatever area you need additional support in.

We look forward to meeting you and working with you in the fall !!

---- ACHS Algebra 1 Team

SUGGESTED TIMELINE FOR SUMMER PACKET COMPLETION

CHECKLIST

- | | | |
|--------------------------|-------------|---|
| <input type="checkbox"/> | Worksheet 1 | Week 1 & Week 2 (June 30 – July 13) |
| <input type="checkbox"/> | Worksheet 2 | Week 3 & Week 4 (July 14 – July 27) |
| <input type="checkbox"/> | Worksheet 3 | Week 5 & Week 6 (July 28 – August 10) |
| <input type="checkbox"/> | Worksheet 4 | Week 7 & Week 8 (August 11 – August 24) |

EXAMPLE 1 Writing a Percent as a Decimal

Remember that dividing by 100 is the same as moving the decimal point two places to the left.

$$\text{a. } 0.48\% = 0.48 \div 100 = .0048 = \boxed{0.0048}$$

$$\text{b. } 175\% = 175 \div 100 = 1.75 = \boxed{1.75}$$

$$\text{c. } 3.6\% = 3.6 \div 100 = .036 = \boxed{0.036}$$

EXAMPLE 2 Writing a Decimal as a Percent**INFORMATION/DIRECTIONS:**

$$\text{a. } 1.09 = 1.09 \times 100 = \boxed{109\%}$$

$$\text{b. } 0.3 = 0.30 = \boxed{30\%}$$

You can also write a decimal as a percent by writing the decimal as a fraction with a denominator of 100. The percent is the numerator. For example,

$$0.3 = \frac{3}{10} = \frac{30}{100} = 30\%$$

All questions marked “**Practice**” must be **COMPLETE** and **CORRECT**. You must return in September knowing how to do all the material in this packet. If you do not understand the material, please use on-line resources, contact the resource person we provided, or visit the Math web sites added at the end of this packet

FRACTIONS, DECIMALS AND PERCENTS: SHOW ALL WORK FOR FULL CREDIT!!!**PRACTICE: SHOW ALL YOUR WORK**

Convert each of the following decimals into percentages w/o the aid of a calculator:

11. 0.073 12. 1.45 13. 0.66 14. 0.40 15. 0.25

Convert each of the following percent into decimals w/o the aid of a calculator:

16. 0.32% 17. 125% 18. 1.32% 19. 0.003% 20. 0.028%

Convert each of the following percent into fractions w/o the aid of a calculator:

21. 0.48% 22. 130%

ORDER OF OPERATIONS & ALGEBRAIC EXPRESSIONS

ACHS Algebra 1 Summer Packet

TRANSLATING EXPRESSIONS:

EXAMPLE: Three times a number plus two.

$$3x+2$$

PRACTICE: Write an algebraic expression for each of the following verbal phrases:

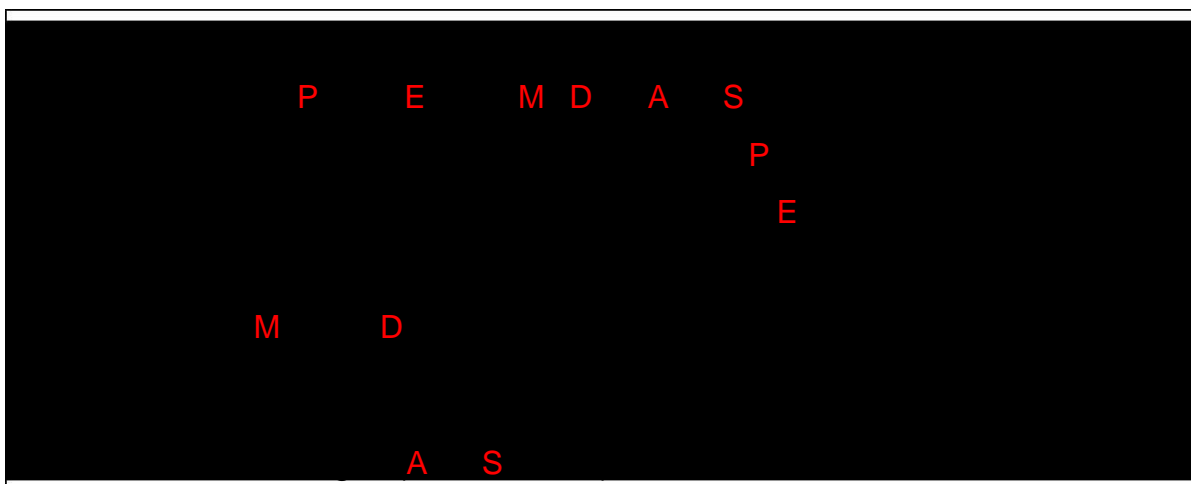
1. The product of twelve and a number.

2. Eight subtracted from three times a number.

3. Six more than twice a number.

4. The sum of thirty and a number.

ORDER OF OPERATIONS:



PRACTICE: Use order of operations (PEMDAS) to simplify each of the following expressions. Do NOT use a calculator. SHOW ALL WORK/STEPS!!!

(EXAMPLE)

5. $14 \div 7 + 3^2$

6. $42 \div 2(-12 + 9)$

7. $|-14|$

$14 \div 7 + 9$ Exponent first
 Division
 Addition
 =11

8. $18 - 30 \div 5$

9. $48 \div (5 + 7) - 9$

10. $4^3 - 5(2+1) + 13$

To access Algebra 1 Summer Packet Project # 2, Please click [here](#) for more information

PRACTICE: Evaluate each expression. Do NOT use a calculator & SHOW ALL WORK!!!

11) $3(n - 1) + 2n$, when $n = 5$ (**EXAMPLE**)

$$3(5) + 2 \cdot 5 \rightarrow$$

∴

$$= 22$$

Substitute for the
variable and use
order of operations

12) $7b - 2a$, when $a = -3$ and $b = 4$

13) $3x^2 + 5x + 1$, when $x = -2$

14) $\frac{2r}{t} + 7$, when $r = 12$ and $t = 3$

15) $(3x)^2 - 7y^2$, when $x = 3$ and $y = 2$

16) $4(3d + 6) - 2d$, when $d = -6$

SOLVING LINEAR EQUATIONS

ACHS Algebra 1 Summer Packet

ALGEBRAIC PROPERTIES:

PRACTICE: Match each equation on the left with the property it illustrates on the right.

1) $4 + (9 + 6) = (4 + 9) + 6$

A. Identity Property of Addition

2) $x + 12 = 12 + x$

B. Associative Property

3) $(3 + y) + 0 = 3 + y$

C. Distributive Property

4) $x \cdot 1 = x$

D. Identity Property of Multiplication

5) $5(x + y) = 5x + 5y$

E. Commutative Property

SIMPLIFYING EXPRESSIONS

PRACTICE: Use algebraic properties to simplify each expression.

6. $4x + 7y - 14x + 2y$ (**EXAMPLE**)
4 -14 +7+2 Combine Like Terms

10. $9(6 + 2y) - 5 + 2y$

$$= -10 + 9$$

7. $-13 - 4y - 5z + 15 - (-4z) + 11y$

11. $2(3x - 1) + 3(x + 7)$

8. $20xy + 3x^2y - 10x^2y - 30xy$

12. $9(2x + 4) - 2(3x - 1)$

9. $-3(2x - 5y)$

DISTRIBUTIVE PROPERTY

PRACTICE: Simplify each expression using the distributive property.

EXAMPLE: $4(x + 5) = 4(x) + 4(5) = 4x + 20$

13) $3(b + 9)$

14) $5(2x - 3)$

15) $-3(4x + 9)$

16) $x(2x + 4)$

17) $\frac{1}{2}(4r + 12)$

18) $-(6p - 11)$

SOLVING EQUATIONS

In order to solve an equation, there must be an equal sign. One must isolate the variable on one side of the equal sign and solve by using algebraic properties.

EXAMPLE:

$3b + 2 = 6(3 - b)$ $3b + 2 = 18 - 6b$ $\begin{array}{r} -2 \quad -2 \\ \hline 3b = 16 - 6b \\ +6b \quad +6b \\ \hline 9b = 16 \\ \frac{9b}{9} = \frac{16}{9} \\ b = \frac{16}{9} \end{array}$	<p>Check:</p> <p>Does $3(\frac{16}{9}) + 2 = 6(3 - (\frac{16}{9}))$?</p> $\frac{16}{3} + 2 = 6(\frac{11}{9})$ $\frac{16}{3} + \frac{6}{3} = \frac{22}{3}$ $\frac{22}{3} = \frac{22}{3} \checkmark$
--	--

PRACTICE: Solve the equation. Include a check

19) $14 = b + 5$

20) $5r = 22$

21) $\frac{x}{4} = -9$

22) $3x - 5 = 13$

23) $\frac{1}{4}d + 2 = 3$

24) $-21 - 5x = 64$

5) $3y + 2y = 81 - 6$

26) $18y - 21 = 15y + 3$

27) $\frac{2a}{7} = \frac{2}{3}$

28) $2x - 10 + 2 = 12$

29) $3(y - 4) = -2y - 12$

To access the Algebra 1 Summer Packet project # 1, Please click [here](#) for more information

PRACTICE: Write an equation to model each situation below and then solve. Do not forget to put units on your answer if they are needed:

30. You are shopping and have \$20 to spend on a birthday present for your brother. You know he loves baseball cards, which are \$1.25 a piece. You have already spent \$3.50 on a card and wrapping paper. How many baseball cards can you buy your brother?

31. The sum of Kent's and Lesley's ages is 53. If Kent is 26, how old is Lesley?

32. Negative 4 times a number is -156. Find the number.

WORD PROBLEMS

LINEAR EQUATIONS

PRACTICE: Write an equation to model each word problem. Include let statements and checks for each problem.

1. Joelle had \$24 to spend on seven pencils. After buying them she had \$10. How much did each pencil cost?

Example:

Let x = cost per pencil

$$7x + 10 = 24$$

$$\quad -10 \quad -10$$

$$\frac{7x}{7} = \frac{14}{7}$$

$$x = 2$$



4. 331 students went on a field trip. Six buses were filled and 7 students traveled in cars. How many students were in each bus?

2. Marla bought seven boxes. A week later half of all her boxes were destroyed in a fire. There are now only 22 boxes left. With how many did she start?

5. You bought a magazine for \$5 and four erasers. You spent a total of \$25. How much did each eraser cost?

3. Coral spent half of her weekly allowance playing mini-golf. To earn more money her parents let her wash the car for \$4. What is her weekly allowance if she ended with \$12?

6. Jacki won 40 super bouncy balls playing horseshoes at her school's game night. Later, she gave two to each of her friends. She only has 8 remaining. How many friends does she have?

RESOURCES

Here are some websites you might find useful in completing your summer assignment.

1. <http://www.regentsprep.org> use the Math A site
2. <http://www.math.com> use both Algebra and Pre-Algebra
3. <http://library.thinkquest.org>
4. http://www.mathgoodies.com/lessons/toc_vol5.html Integers
5. http://www.teacherschoice.com.au/Maths_Library/Algebra/Alg_1.htm
6. <http://education.jlab.org/solquiz>
7. http://w3.fiu.edu/math/cine_math/fast/pie.htm solving equations
8. <http://www.algebrahelp.com/worksheets/>
9. <http://www.math.com/homeworkhelp/Algebra.html>
10. <http://www.math.com/homeworkhelp/PreAlgebra.html>

ORDERING AND COMPARING NUMBERS

<http://www.ck12.org/arithmetic/Order-of-Real-Numbers/>

<http://www.virtualnerd.com/pre-algebra/real-numbers-right-triangles/real-and-irrational/compare-classify-numbers/order-real-numbers-example>

OPERATIONS WITH SIGNED NUMBERS

<http://www.epcc.edu/tutorialservices/valleverde/Documents/SignsOOPS.pdf>

<http://amby.com/educate/math/integer.html>

http://www.wtamu.edu/academic/anns/mps/math/mathlab/int_algebra/int_alg_tut4_operations.htm

OPERATIONS WITH FRACTIONS

<http://www.aaamath.com/fra.html>

<http://www.ck12.org/arithmetic/Equivalent-Fractions/>

<http://www.ck12.org/arithmetic/Fractions-in-Simplest-Form/>

<http://www.ck12.org/arithmetic/Sums-of-Fractions-with-Like-Denominators/>

<http://www.ck12.org/arithmetic/Differences-of-Fractions-with-Different-Denominators/>

<http://www.ck12.org/arithmetic/Products-of-Two-Fractions/>

<http://www.ck12.org/arithmetic/Quotients-of-Fractions/>

RATIO – PROPORTION – PERCENT

<http://www.ck12.org/arithmetic/Ratios/>

<http://www.ck12.org/arithmetic/Proportions/>

<http://www.ck12.org/arithmetic/Percents/>

ORDER OF OPERATIONS

<http://www.ck12.org/algebra/PEMDAS/>

LITERAL EQUATIONS <http://www.ck12.org/algebra/Linear-Equations/enrichment/Solving-Literal-Equations---Overview/>

<http://www.ck12.org/user:sccmath101/section/Literal-Equations/>