

Advanced Algebra I

Summer Math
Skills Review



2017 - 2018

Please bring your completed packet to the first day of class on August 14, 2017 (A day) or August 15 (B Day).

Make sure to follow directions and show your thinking! Use a separate sheet of paper if needed!

Congratulations on your placement into Advanced Algebra II!

This packet needs to be completed by the first day of school, August 14 (A day) or August 15 (B day). This packet will be counted as a homework assignment and a large quiz will be given over the concepts. There will be 1 - 2 day of review over the packet before the quiz will be given. All of the material in this packet should be review from your junior high math courses.

If you are having trouble remembering how to complete some of the problems, please look at khanacademy.org. You will find some great videos that will help right away.

REQUIRED CALCULATOR:

TI - 84 PLUS

** If anyone loses their packet, they can pick another packet up in the main office at Central Campus. Call for office hours (815)467-2140 or look at www.mchs.net.**

Name _____

Adding/Subtracting Integers

Date _____ Period _____

Find each sum.

1) $(-12) + 7$

2) $(-10) + (-7)$

3) $(-6) + 12$

4) $8 + 7$

5) $3 + 4$

6) $(-45) + 9$

7) $(-1) + (-46)$

8) $(-30) + 10$

9) $(-34) + 50$

10) $38 + (-5)$

Find each difference.

11) $2 - (-2)$

12) $(-1) - 10$

13) $8 - 7$

14) $(-8) - (-6)$

$15) 11 - 4$

$16) 48 - (-31)$

$17) 18 - 41$

$18) (-38) - 30$

$19) (-1) - (-3)$

$20) (-1) - (-40)$

Evaluate each expression.

$21) (-10) - 47$

$22) (-29) - 29$

$23) 13 + (-29)$

$24) 38 + 22$

$25) (-32) - 44$

$26) (-12) + (-11)$

$27) 2 + 15 + 4$

$28) 16 + (-13) + 5$

$29) 2 - (-9) - 8$

$30) 10 + 3 - (-8)$

Name _____

Date _____ Period _____

Order of Operations

Evaluate each expression.

1) $(30 - 3) \div 3$

2) $(21 - 5) \div 8$

3) $1 + 7^2$

4) $5 \times 4 - 8$

5) $8 + 6 \times 9$

6) $3 + 17 \times 5$

7) $7 + 12 \times 11$

8) $15 + 40 \div 20$

9) $20 + 16 - 15$

10) $19 - 15 - 3$

11) $9 \times (3 + 3) \div 6$

12) $(9 + 18 - 3) \div 8$

$$13) 9 + 6 \div (8 - 2)$$

$$14) 4(4 \div 2 + 4)$$

$$15) 6 + (5 + 8) \times 4$$

$$16) 6 \times 6 - (7 + 5)$$

$$17) (9 \times 2) \div (2 + 1)$$

$$18) 2 - (4 + 3 - 6)$$

$$19) 7 \times 7 - (8 - 2)$$

$$20) 9 - 7 - 6 \div 6$$

$$21) (4 - 1 + 8 \div 8) \times 5$$

$$22) (10 \times 2) \div (1 + 1)$$

$$23) 7 \times 9 - 7 - 3 \times 5$$

$$24) 8 - 1 - (18 - 2) \div 8$$

Name _____

Date _____ Period _____

Simplifying Variable Expressions

Simplify each expression.

1) $-3p + 6p$

2) $b - 3 + 6 - 2b$

3) $7x - x$

4) $7p - 10p$

5) $-10v + 6v$

6) $-9r + 10r$

7) $9 + 5r - 9r$

8) $1 - 3v + 10$

9) $5n + 9n$

10) $4b + 6 - 4$

11) $35n - 1 + 46$

12) $-33v - 49v$

13) $30n + 8n$

14) $7x + 31x$

15) $10x + 36 - 38x - 47$

16) $-2(7 - n) + 4$

17) $-8(-5b + 7) + 5b$

18) $-4p - (1 - 6p)$

19) $4 - 5(-4n + 3)$

20) $-7(k - 8) + 2k$

21) $1 + 7(1 - 3b)$

22) $3 - 8(7 - 5n)$

Name_____

Date_____ Period____

Evaluating Variable Expressions

Evaluate each using the values given.

1) $n^2 - m$; use $m = 7$, and $n = 8$

2) $8(x - y)$; use $x = 5$, and $y = 2$

3) $yx \div 2$; use $x = 7$, and $y = 2$

4) $m - n \div 4$; use $m = 5$, and $n = 8$

5) $x - y + 6$; use $x = 6$, and $y = 1$

6) $z + x^3$; use $x = 1$, and $z = 19$

7) $y + yx$; use $x = 15$, and $y = 8$

8) $q \div 6 + p$; use $p = 10$, and $q = 12$

9) $x + 8 - y$; use $x = 20$, and $y = 17$

10) $15 - (m + p)$; use $m = 3$, and $p = 10$

11) $10 - x + y \div 2$; use $x = 5$, and $y = 2$

12) $p - 2 + qp$; use $p = 7$, and $q = 4$

13) $zy + 4y$; use $y = 5$, and $z = 2$

14) $b(a + b) + a$; use $a = 9$, and $b = 4$

15) $p^2 \div 4 - m$; use $m = 3$, and $p = 4$

16) $x(y \div 3)^2$; use $x = 4$, and $y = 9$

17) $4 + m + n - m$; use $m = 4$, and $n = 9$

18) $qp + q - p$; use $p = 7$, and $q = 3$

19) $mn \div 6 + 10$; use $m = 7$, and $n = 6$

20) $h + j(j - h)$; use $h = 2$, and $j = 6$

21) $(b - 1)^2 + a^2$; use $a = 6$, and $b = 1$

22) $y(x - (9 - 4y))$; use $x = 4$, and $y = 2$

23) $x - (x - (x - y^3))$; use $x = 9$, and $y = 1$

24) $j(h - 9)^3 + 2$; use $h = 9$, and $j = 8$

Name _____

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Multi-Step Equations

Solve each equation.

1) $6a + 5a = -11$

2) $-6n - 2n = 16$

3) $4x + 6 + 3 = 17$

4) $0 = -5n - 2n$

5) $6r - 1 + 6r = 11$

6) $r + 11 + 8r = 29$

7) $-10 = -14v + 14v$

8) $-10p + 9p = 12$

9) $42 = 8m + 13m$

10) $a - 2 + 3 = -2$

11) $18 = 3(3x - 6)$

12) $30 = -5(6n + 6)$

$$13) 37 = -3 + 5(x + 6)$$

$$14) -13 = 5(1 + 4m) - 2m$$

$$15) 4(-x + 4) = 12$$

$$16) -2 = -(n - 8)$$

$$17) -6(1 - 5v) = 54$$

$$18) 8 = 8v - 4(v + 8)$$

$$19) 10(1 + 3b) = -20$$

$$20) -5n - 8(1 + 7n) = -8$$

$$21) -5(4x - 2) = -2(3 + 6x)$$

$$22) 5(2x + 6) = -4(-5 - 2x) + 3x$$

$$23) 8(1 + 5x) + 5 = 13 + 5x$$

$$24) -11 - 5a = 6(5a + 4)$$

Name_____

Date_____ Period_____

Numbers and Expressions

Write each as a verbal expression.

1) $17 - 16$

2) $4 + 8$

3) 3^3

4) $9 + 10$

5) 4^3

6) $12 + 9$

7) $11 + 11$

8) $20 - 7$

9) $16 - 7$

10) $2 \cdot 9$

11) 2^2

12) $21 - 8$

Write each as an algebraic expression.

13) 10 less than 14

14) half of 16

15) the quotient of a number and 6

16) v squared

17) t more than 9

18) 3 cubed

19) the quotient of 24 and 8

20) the sum of 2 and 12

21) p cubed

22) the product of 5 and x

23) 2 to the 4th

24) twice 11

Evaluate each expression.

25) 10 minus 6

26) 2 cubed

27) twice 12

28) 11 increased by 5

29) 6 times 10

30) 4 times 8

Name_____

Date_____ Period_____

One-Step Equation Word Problems

- 1) Lisa is cooking muffins. The recipe calls for 7 cups of sugar. She has already put in 2 cups. How many more cups does she need to put in?
- 2) At a restaurant, Mike and his three friends decided to divide the bill evenly. If each person paid \$13 then what was the total bill?
- 3) How many packages of diapers can you buy with \$40 if one package costs \$8?
- 4) Last Friday Trevon had \$29. Over the weekend he received some money for cleaning the attic. He now has \$41. How much money did he receive?
- 5) Last week Julia ran 30 miles more than Pranav. Julia ran 47 miles. How many miles did Pranav run?
- 6) How many boxes of envelopes can you buy with \$12 if one box costs \$3?
- 7) Amanda and her best friend found some money buried in a field. They split the money evenly, each getting \$24.28. How much money did they find?
- 8) Jenny wants to buy an MP3 player that costs \$30.98. How much change does she receive if she gives the cashier \$40?

Name _____

Date _____ Period _____

Two-Step Equation Word Problems

- 1) 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) Aliyah had \$24 to spend on seven pencils. After buying them she had \$10. How much did each pencil cost?
- 3) The sum of three consecutive numbers is 72. What are the smallest of these numbers?
- 4) The sum of three consecutive even numbers is 48. What are the smallest of these numbers?
- 5) You bought a magazine for \$5 and four erasers. You spent a total of \$25. How much did each eraser cost?
- 6) Maria 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?
- 7) Sumalee 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?
- 8) Imani 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?

