

## Algebra 1 Common Core

Week of September 2, 2014

Go to [www.khanacademy.org](http://www.khanacademy.org): (You can sign up for free if you want, but you do not have to sign up to be able to access the videos and practice problems.)

- Under Subjects in the top left, choose Math, then Algebra 1
- On the right, choose “Introduction to algebra”
- Find the group named “Variables and expressions.” Watch the videos and do the practice problems under that group in the order they are there. When you do the practice problems, if you get the first one correct, you move on; if not, you have to get 5 in a row correct.
  - “What is a variable?” video
  - “Why aren’t we using the multiplication sign?” video
  - “Evaluating an expression example” video
  - “Evaluating an expression using substitution” video
  - “Evaluating exponential expression 2” video
  - “Evaluating expressions in one variable” practice problems
  - “Expressions with two variables” video
  - “Example: Evaluating expressions with 2 variables” video
  - “Examples of evaluating variable expressions” video
  - “Evaluating expressions in 2 variables” practice problems
  - “Evaluating an expression in a word problem” video
  - “Evaluating expressions with variables word problems” practice problems

Complete the following worksheets:

- Variable and Verbal Expressions
- Evaluating Expressions
- Order of Operations
- Adding and Subtracting Positive and Negative Numbers
- Multiplying and Dividing Positives and Negatives

## Variable and Verbal Expressions

Write each as an algebraic expression.

1) the difference of 10 and 5

2) the quotient of 14 and 7

3)  $u$  decreased by 17

4) half of 14

5)  $x$  increased by 6

6) the product of  $x$  and 7

7) the sum of  $q$  and 8

8) 6 squared

9) twice  $q$

10) the product of 8 and 12

11) the quotient of 18 and  $n$

12)  $n$  cubed

Write each as a verbal expression.

13)  $\frac{x}{2}$

14)  $a + 9$

15)  $19 - 3$

16)  $5n$

17)  $q^2$

18)  $\frac{40}{5}$

19)  $\frac{a}{8}$

20)  $x + 8$

21)  $n - 14$

22)  $2^2$

23)  $\frac{60}{5}$

24)  $n \cdot 6$

**Evaluate each expression.**

25) 5 squared

26) the product of 8 and 10

27) 20 decreased by 17

28) the quotient of 96 and 8

29) twice 6

30) 10 less than 17

31) 9 times 5

32) 10 increased by 8

33) 7 squared

34) the product of 4 and 5

## Evaluating Expressions

Evaluate each using the values given.

1)  $y \div 2 + x$ ; use  $x = 1$ , and  $y = 2$

2)  $a - 5 - b$ ; use  $a = 10$ , and  $b = 4$

3)  $p^2 + m$ ; use  $m = 1$ , and  $p = 5$

4)  $y + 9 - x$ ; use  $x = 1$ , and  $y = 3$

5)  $m + p \div 5$ ; use  $m = 1$ , and  $p = 5$

6)  $y^2 - x$ ; use  $x = 7$ , and  $y = 7$

7)  $z(x + y)$ ; use  $x = 6$ ,  $y = 8$ , and  $z = 6$

8)  $x + y + y$ ; use  $x = 9$ , and  $y = 10$

9)  $p^3 + 10 + m$ ; use  $m = 9$ , and  $p = 3$

10)  $6q + m - m$ ; use  $m = 8$ , and  $q = 3$

11)  $p^2m \div 4$ ; use  $m = 4$ , and  $p = 7$

12)  $y - (z + z^2)$ ; use  $y = 10$ , and  $z = 2$

13)  $z - (y \div 3 - 1)$ ; use  $y = 3$ , and  $z = 7$

14)  $(y + x) \div 2 + x$ ; use  $x = 1$ , and  $y = 1$

15)  $p - (9 - (m + q))$ ; use  $m = 4$ ,  $p = 5$ , and  $q = 3$

16)  $(a^2 - b) \div 6$ ; use  $a = 5$ , and  $b = 1$

17)  $(6 + h^2 - j) \div 2$ ; use  $h = 6$ , and  $j = 4$

18)  $y - (4 - x - y \div 2)$ ; use  $x = 3$ , and  $y = 2$

19)  $x^3 \div 3 - y$ ; use  $x = 3$ , and  $y = 1$

20)  $(p + q)^2 - (5 - 5)$ ; use  $p = 1$ , and  $q = 1$

21)  $12k - h^2$ ; use  $h = 2$ , and  $k = 3$

22)  $y \div 5 + 1 + x \div 6$ ; use  $x = 6$ , and  $y = 5$

23)  $6 \div 6 + z + x - y$ ; use  $x = 2$ ,  $y = 5$ , and  $z = 6$

24)  $y - z + xz \div 6$ ; use  $x = 3$ ,  $y = 4$ , and  $z = 4$

25)  $\frac{y}{2} + x + 4 + z + y$ ; use  $x = 7$ ,  $y = 2$ , and  $z = 4$

26)  $c \times \frac{bc}{4} - (7 - a)$ ; use  $a = 4$ ,  $b = 8$ , and  $c = 5$

## Order of Operations

**Evaluate each expression.**

1)  $3(6 + 7)$

2)  $5 \times 3 \times 2$

3)  $72 \div 9 + 7$

4)  $2 + 7 \times 5$

5)  $9 + 8 - 7$

6)  $9 - 32 \div 4$

7)  $5(10 - 1)$

8)  $48 \div (4 + 4)$

9)  $20 \div (4 - (10 - 8))$

10)  $40 \div 4 - (5 - 3)$

11)  $9 + 9 + 6 - 5$

12)  $(5 + 16) \div 7 - 2$

13)  $7 + 10 \times 5 + 10$

14)  $(6 + 25 - 7) \div 6$

$$15) (6 - 4) \times 49 \div 7$$

$$16) (7 \times 5) \div 5$$

$$17) \frac{43 - 1}{4 + 2} + 10$$

$$18) (8 + 5) \times \frac{35}{5} + 6$$

$$19) \frac{27}{2 + 3 + 4} + 3$$

$$20) \frac{45}{8(5 - 4) - 3}$$

$$21) 8 \times \frac{15}{5} - (5 + 9)$$

$$22) 2 \times 7 - \frac{10}{9 - 4}$$

$$23) (10 + 2 - 2) \times 6 - 1$$

$$24) \frac{49}{7} \times \frac{60}{2 \times 5}$$

$$25) (2 + 6 \times 2 + 2 - 4) \times 2$$

$$26) \frac{8}{5 - 1} \times (3 + 6) \times 3$$

## Adding and Subtracting Positive and Negative Numbers Date \_\_\_\_\_ Period \_\_\_\_\_

Evaluate each expression.

1)  $(-2) + 3$

2)  $(-14) + (-7)$

3)  $3 - (-8)$

4)  $(-9) + 14$

5)  $(-8) - (-2)$

6)  $5 + (-8)$

7)  $(-27) - 24$

8)  $(-41) + (-40)$

9)  $38 - (-17)$

10)  $(-44) + (-9)$

11)  $(-16) - (-36)$

12)  $(-6) - 24$

13)  $(-16) - 6 + (-5)$

14)  $15 - 13 + 2$

15)  $16 - (-13) - (-5)$

16)  $(-7) - (-2) - 9$



$$17) (-11) - (-14) + 7$$

$$18) 7 + (-1) + 12 - 7$$

$$19) 6 + (-7) + (-5) - (-2)$$

$$20) (-3) + 5 + (-5) + 12$$

$$21) (-11) - 8 + 1 - (-6)$$

$$22) 10 - (-10) - 7 - 5$$

$$23) 6 - 3.98$$

$$24) 5.8 + (-2.5)$$

$$25) 1.8 - (-3.7)$$

$$26) 7 - 2.8$$

$$27) (-0.8) + (-7.2) - 5.4$$

$$28) 1.7 - (-0.8) + 4.013$$

$$29) \left(-\frac{3}{2}\right) + \frac{8}{5}$$

$$30) \frac{7}{4} - \left(-\frac{1}{2}\right)$$

$$31) \left(-\frac{1}{5}\right) + \frac{7}{4}$$

$$32) \frac{2}{5} - \frac{4}{5}$$

## Multiplying and Dividing Positives and Negatives

Date \_\_\_\_\_ Period \_\_\_\_\_

Find each quotient.

1)  $\frac{10}{5}$

2)  $\frac{-24}{12}$

3)  $\frac{-20}{-2}$

4)  $\frac{-300}{-20}$

5)  $\frac{65}{5}$

6)  $\frac{-66}{-6}$

7)  $\frac{75}{-15}$

8)  $\frac{-56}{-14}$

9)  $\frac{102}{-17}$

10)  $\frac{-72}{-4}$

11)  $153 \div 17$

12)  $12 \div -3$

13)  $48 \div 6$

14)  $-120 \div -20$

15)  $306 \div 18$

16)  $-65 \div 13$

$17) -85 \div -17$

$18) 128 \div -16$

$19) -180 \div 15$

$20) 234 \div -13$

**Find each product.**

$21) -11 \times 9$

$22) -7 \times -12$

$23) -8 \times -11$

$24) -6 \times 4$

$25) -3 \times -11$

$26) -5 \times -9$

$27) 9 \times -7$

$28) -9 \times -3$

$29) 12 \times -12$

$30) 11 \times -6$

$31) 6 \times -5 \times 3$

$32) 6 \times -1 \times 2$

$33) 8 \times -6 \times -3$

$34) -3 \times 6 \times -6$

$35) (3)(3)(-1)(3)$

$36) (-3)(3)(-3)(-3)$