

Accelerated Math Study Guide  
Test on chapters 1 and 2

Key

This is a "no calculator" test.

It will be part multiple choice (no work needs to be shown) and part short answer (work must be shown for full credit).

Test covers sections:

- (1.2) Words and Expressions
- (1.3) Variables and Expressions (includes ones with exponents that are not in that section)
- (1.4) Properties of Numbers (includes distributive property that is not in that book section)
- (1.7) Words, Equations, Tables, and Graphs
- (2.1) Integers and Absolute Value
- (2.2) Adding Integers
- (2.3) Subtracting Integers
- (2.4) Multiplying Integers
- (2.5) Dividing Integers
- (2.2-2.5) Using Order of Operations Agreement with Integers
- (2.6) Graphing in Four Quadrants

How to study for the test:

- \*Review Notes and Quizzes from these sections.
- \*Look over problems we have done in these chapters. They should be in the assignment section of your binder. Redo problems that you got wrong the first time you did the assignment to make sure you now understand them.
- \*Do the Practice Problems for the Test (attached)  
These problems are representative of problems you will see on the test.
- \*Optional Practice
  - p. 42 - 44 # 5-31 odd, 40 (answers are in the back of your book)
  - p. 88-90 #1-77 odd (answers are in the back of your book)

Know and be able to use these vocabulary words:

absolute value  
additive inverse  
algebraic expression  
associative property  
commutative property  
coordinate plane  
counterexample  
defining a variable  
difference  
distributive property  
equation  
evaluate  
exponent  
identity property of addition  
identity property of multiplication  
inequality  
integer  
mean  
median  
model of operations (counters & # line)  
multiplication property of zero

natural numbers  
numerical expression  
opposites  
order of operations  
ordered pair  
origin  
perfect square  
product  
quadrants  
quotient  
simplify  
sum  
variable  
whole numbers  
x-axis  
x-coordinate  
y-axis  
y-coordinate  
zero pair

**Accelerated Math Practice Problems**  
 (Chapters 1 & 2) Algebraic Reasoning and Integers

Name Key  
 Block \_\_\_\_\_ Date \_\_\_\_\_

**Sample Test Questions** ( \* means steps must be shown)

1) Which properties were used to do each of the following steps?

Choose from: arithmetic      distributive  
 associative      commutative      identity

$$\begin{aligned} (-3a)4 &= [(a)(-3)]4 && \underline{\text{Commutative}} \\ &= a[(-3)(4)] && \underline{\text{associative}} \\ &= a(-12) && \underline{\text{arithmetic}} \\ &= (-12)a && \underline{\text{commutative}} \\ &= -12a && \underline{\text{Best form}} \end{aligned}$$

2) Which properties were used to do each of the following steps?

Choose from: arithmetic      distributive  
 associative      commutative      identity

$$\begin{aligned} (7+4) + (x+9) &= 11 + (x+9) && \underline{\text{arithmetic}} \\ &= 11 + (9+x) && \underline{\text{commutative}} \\ &= (11+9) + x && \underline{\text{associative}} \\ &= 20 + x && \underline{\text{arithmetic}} \\ &= x + 20 && \underline{\text{commutative}} \end{aligned}$$

\*3) Evaluate:

$$\begin{aligned} &-5(-4 + 7)^2 \\ &-5(3)^2 \\ &-5 \cdot 9 \\ &\underline{-45} \end{aligned}$$

\*4) Evaluate:

$$\begin{aligned} &-5 + 8(-7 - 3 + 1) \\ &-5 + 8(-7 - 3 + 1) \\ &-5 + 8(-9) \\ &-5 + -72 \\ &\underline{-77} \end{aligned}$$

\*5) Find the sum of the quantity negative two cubed and five squared.

$$\begin{aligned} &(-2)^3 + (5)^2 \\ &-8 + 25 \\ &\underline{17} \end{aligned}$$

\*6) Evaluate if  $a = -3$ ,  $b = 5$  and  $c = 10$   
 $ab - c$

$$\begin{aligned} &(-3)(5) - (10) \\ &-15 - 10 \\ &\underline{-25} \end{aligned}$$

\*7) Evaluate if  $a = -5$ ,  $b = 3$   
and  $c = -8$

$$ab^2 - c$$

$$-5(3)^2 - (-8)$$

$$-5(9) + 8$$

$$-45 + 8$$

$$\underline{-37}$$

8) Name the property shown.

A)  $ab = ba$

commutative

B)  $5(8 - 10) = 5(8) - 5(10)$

distributive

C)  $-8(1) = -8$

identity  $\times$

D)  $8 + 0 = 8$

identity  $+$

E)  $[(12)(25)](4) = 12[(25)(4)]$

associative

F)  $(6 + 4) + 2 = (4 + 6) + 2$

commutative

\*9) Simplify:

A)  $-9(7y) = \underline{-63y}$

B)  $-2 + x + 8 = \underline{x + 6}$

C)  $4a(-5)(3b) = \underline{-60ab}$

\*10) The equation of a relation is  $y = x - 2$

Write this relation in

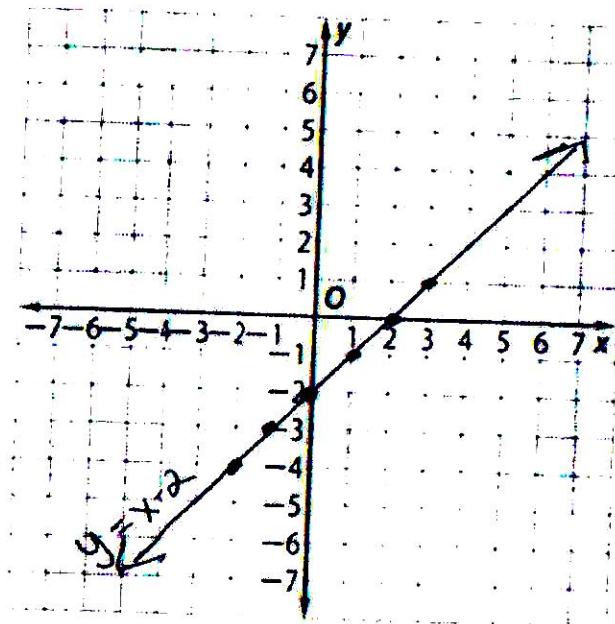
A) Words: One # is two less than another #

B) Table:

(at least 5 ordered pairs)

x	y
0	-2
1	-1
2	0
3	1
-1	-3
-2	-4

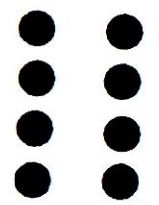
C) Graph:



Key

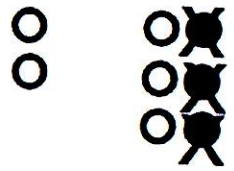
Use the models: +1 = ○ and -1 = ● to write the number sentences that go with each of the following models.

11) Give two different number sentences.



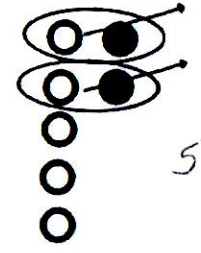
$-4 + -4 = -8$   
 $2(-4) = -8$

12) Give one number sentence.



$2 - -3 = 5$

13) Give one number sentence.



$5 + -2 = 3$

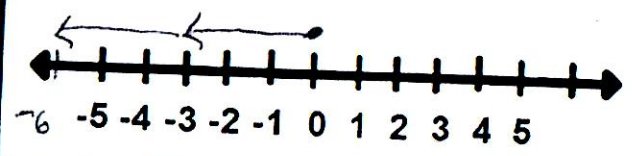
14) Give one number sentence.



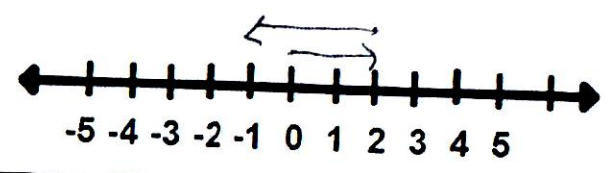
$-4 - -1 = -3$

Model the following problems on the number line and complete the number sentence.

15)  $2(-3) = -6$



16)  $2 + -3 = -1$



Sometimes, Always, or Never ?? Explain your reasoning.

\*17) A positive number subtract a negative number is a positive number.

Always  $6 - -2 = 6 + 2 = 8$

In order to subtract negatives you have to put in zero pairs. After subtracting you have the positives you started with plus the positives from the zero pairs

18) A point that lies on the y-axis will have a y-coordinate of zero.

Sometimes. This is only true for origin (0,0) other points on y axis have an x-coordinate of zero. Points with y-coordinates of zero are on x axis.

\*19 Place the following in order from smallest to largest. Use the letters in your final answer.

A  $-8 + 6$   $(-2)$

B  $-|-4|$   $(-4)$

C  $(-2)(-1)(-5)$   $(-10)$

D  $(-2)^4$   $(16)$

E  $|-4-3| + |2|$

$| -4 + -3 | + 2$   
 $| -7 | + 2$   
 $7 + 2$   
 $9$

**C B A E D**

\*20) Evaluate:

$6(-3)^2 - (-5) - 2$

$6(9) + 5 + -2$

$54 + 5 + -2$

$59 + -2$

$(57)$

\*21) Evaluate if

$a = -4$     $b = 3$     $c = -5$

$abc - ab^2$

$(-4)(3)(-5) - (-4)(3)^2$

$60 - (-4)(9)$

$60 - -36$

$60 + 36$

$(96)$

22) Name an ordered pair with the following conditions:

A) located in Quadrant I

$(3, 7)$     $(\text{pos}, \text{pos})$    Ans. vary

B) called the origin

$(0, 0)$

C) y-coordinate is negative and x-coordinate is positive

$(3, -4)$    Ans vary

\*23) Explain the meaning of the absolute value of a number.

Give examples.

$|-2| = 2$  because  $-2$  is 2 units from zero on # line.

$|2| = 2$  also since 2 is 2 units from zero on # line

\*24) Evaluate:

$\frac{(-1 + -1)^3}{-2 \div 1} + \frac{10^2}{5}$

$\frac{(-2)^3}{-2} + \frac{100}{5}$

$\frac{-8}{-2} + 20$

$4 + 20$

$(24)$

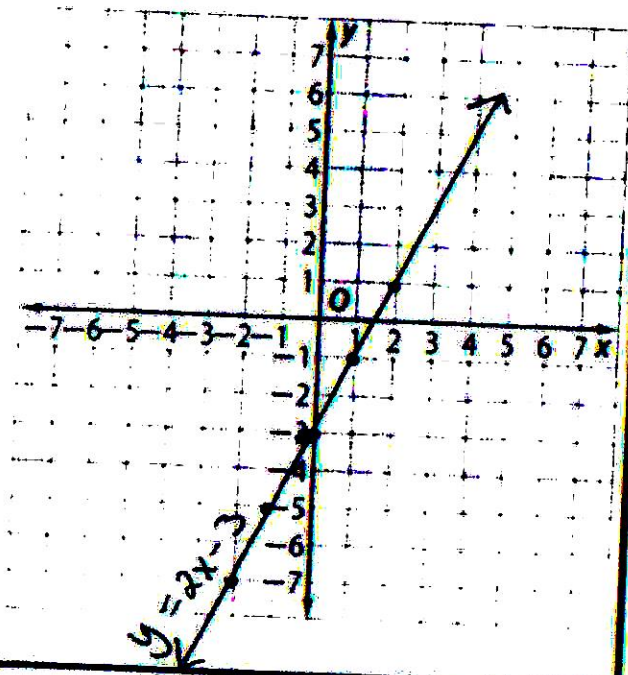
\*25) The equation of a relation is  $y = 2x - 3$   
Write this relation in

A) Words: One # is three less than  
the product of 2 and another #

B) Table:  
(at least 5 ordered  
pairs)

x	y
0	-3
1	-1
2	1
-1	-5
-2	-7

C) Graph:



\*26) The equation of a relation is  $x + y = -5$   
Write this relation in

A) Words: The sum of 2 #'s is  
-5

B) Table:  
(at least 5 ordered  
pairs)

x	y
0	-5
-5	0
1	-6
-1	-4

C) Graph:

