

Properties Activity

Name: \_\_\_\_\_  
Date: \_\_\_\_\_

Class: \_\_\_\_\_

Properties Activity Sheet

Name the property shown by each statement:

1.  $17 + 22 = 22 + 17$  \_\_\_\_\_
2.  $12 \times 46 = 46 \times 12$  \_\_\_\_\_
3.  $89 + 0 = 89$  \_\_\_\_\_
4.  $89 \times 1 = 89$  \_\_\_\_\_
5.  $89 \times 0 = 0$  \_\_\_\_\_
6.  $(8 + 4) + 5 = 8 + (4 + 5)$  \_\_\_\_\_
7.  $(43 \times 2) \times 5 = 43 \times (2 \times 5)$  \_\_\_\_\_

Use the properties to find each sum mentally.

- |                               |                                   |
|-------------------------------|-----------------------------------|
| 8. $36 + 48 + 14$ _____       | 9. $28 + 0 + 12$ _____            |
| 10. $29 + 14 + 71$ _____      | 11. $4 \times 35 \times 50$ _____ |
| 12. $(1.35)(27)(0)(13)$ _____ | 13. $274,345 \times 1$ _____      |

Complete the following statements:

14. The Commutative Property applies to the operations of \_\_\_\_\_ of and \_\_\_\_\_. It states that the order of terms does not change the sum or product.
15. The Associative Property states that the terms can be grouped in any order in \_\_\_\_\_ problems or in \_\_\_\_\_ problems, without affecting the sum or product.
16. What number is known as the additive identity? Adding this to a number does not change the number's identity \_\_\_\_\_.

Matching Properties

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Match the appropriate Property with the correct example.

1.  $4 + 5 + 6 = 6 + 4 + 5$  \_\_\_\_\_
2.  $a(0) = 0$  \_\_\_\_\_
3.  $2 \left(\frac{1}{2}\right) = 1$  \_\_\_\_\_
4.  $(a)(d) = (d)(a)$  \_\_\_\_\_
5.  $(8+2)+4 = 8+(2+4)$  \_\_\_\_\_
6.  $8(1) = 8$  \_\_\_\_\_
7.  $42 - 6a = 6(7-a)$  \_\_\_\_\_
8.  $a + 0 = a$  \_\_\_\_\_

- a. additive identity
- b. commutative of addition
- c. associative of addition
- d. multiplicative inverse
- e. multiplicative identity
- f. commutative of multiplication
- g. distributive property
- h. associative of multiplication
- i. multiplicative of zero

A teacher distributes different mathematics books to students for their study and revision. She gave out similar copies of out 4 Trigonometry, 6 Algebra, 3 Pre-calculus, 9 Statistics and 4 Geometry books. A Trigonometry book has 400 more pages than an Algebra book, a Pre-calculus book has twice the number of pages as an Algebra book, a Statistics book has  $1\frac{1}{2}$  times the number of pages as an Algebra book and a Geometry book has 150 more pages than an Algebra book.

1. Letting  $p$  to represent the number of pages in an Algebra book, write the number of pages of each of the trigonometry, algebra, pre-calculus, and statistics and geometry book in terms of  $p$ .

2. Write a linear expression that represents the total number of pages in all the books that were given out.

3. Write down a simplified form of the expression in (a) above.

4. If the total number of pages in all the books is 8900 write an equations to represent this.

5. Find the value of  $p$ .

6. Find the number of pages in an algebra book.

7. Find the number of pages in the other books

Name \_\_\_\_\_



**Directions. Read the algebraic expression and answer the questions that follow in the box on the right.**

$4x - 2y + 3$	
1. What are the three terms in this expression?	
2. What are the variable terms?	
3. What is the constant term?	
$5x^2 + x + 7$	
4. What is the variable in this expression?	
5. What is the 5 in the term $5x^2$ called?	
6. What is the 2 in the term $5x^2$ called?	
$x^3 - xy + y^2 - 9$	
7. How could $y^2$ be rewritten?	
8. What does the term $xy$ mean?	
9. Can you combine all the Xs and Ys in this expression?	