



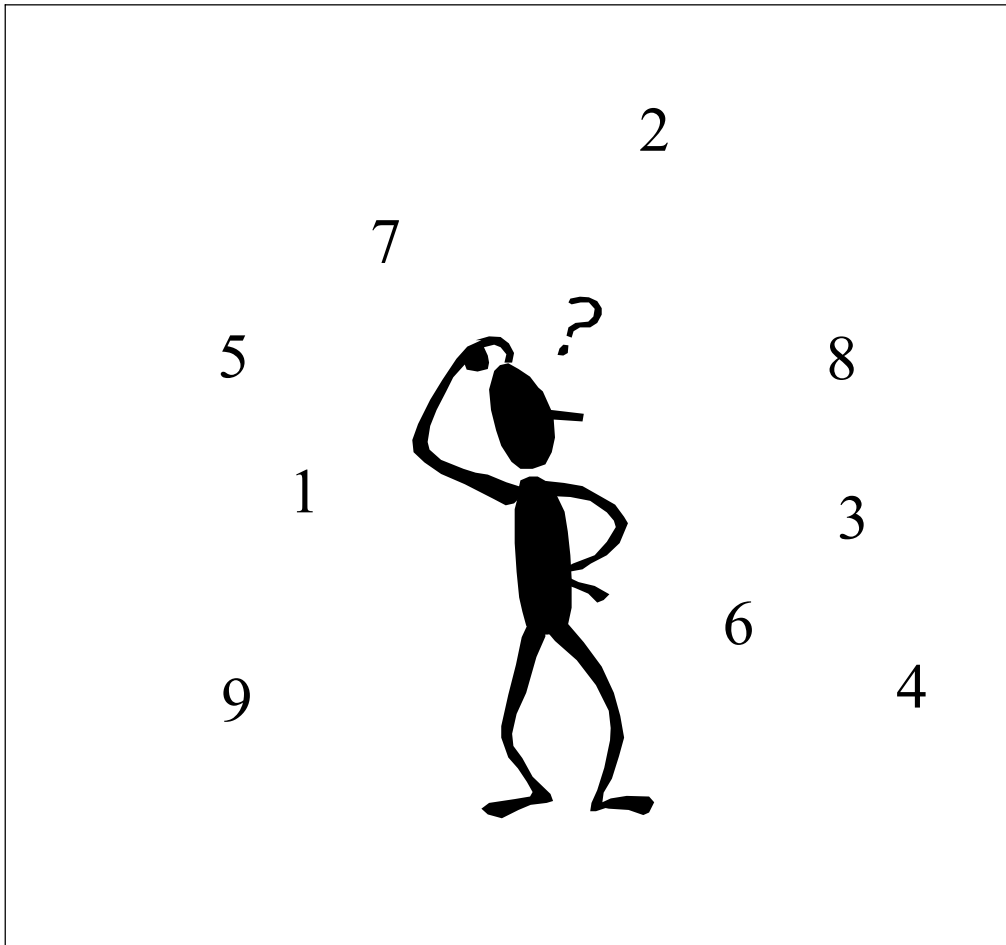
“I Don’t Get It!”

**The Middle School Math
Dictionary and
Instruction Manual**

By Nancy L. Wilkinson




Number Theory



Subject Area	Word	Definition
Number Theory	Compatible Numbers	Numbers that are easy to divide mentally – whole numbers without a fraction Examples: $48 \div 8$.
Number Theory	Addend	The numbers that are added together Example: In the problem $2 + 3 = 5$, 2 and 3 are addends.
Number Theory	Associative Property of Addition	Changing the grouping of the addends does not change the sum Arithmetic $(2.5 + 6) + 4 = 2.5 + (6 + 4)$ Algebra $(a + b) + c = a + (b + c)$
Number Theory	Associative Property of Multiplication	Changing the grouping of the factors does not change the product Arithmetic $(2.5 \cdot 6) \cdot 4 = 2.5 \cdot (6 \cdot 4)$ Algebra $(a \cdot b) \cdot c = a \cdot (b \cdot c)$
Number Theory	Commutative Property of Addition	Changing the order of the addends does not change the sum Arithmetic $1.2 + 3.4 = 3.4 + 1.2$ Algebra $a + b = b + a$
Number Theory	Commutative Property of Multiplication	Changing the order of the factors does not change the product Arithmetic $2 \cdot 4 = 4 \cdot 2$ Algebra $a \cdot b = b \cdot a$
Number Theory	Composite	A number that is divisible by another number in addition to itself and 1. The opposite of prime Example: 4 is composite because it is divisible by 1, 4 and <u>2</u> .
Number Theory	Difference	The answer you get when you subtract one number or quantity from another number or quantity
Number Theory	Distributive Property	Multiply each term inside a set of parentheses by a factor outside the parentheses Arithmetic $3(2 + 1) = 3 \cdot 2 + 3 \cdot 1$ $6(3 - 2) = (6 \cdot 3) - (6 \cdot 2)$ Algebra $a(b + c) = ab + ac$ $a(b - c) = ab - ac$
Number Theory	Divisible	A number that can go evenly into another number Example: 4 is divisible by 2 because
Number Theory	Exponent	Identifies how many times the base is used as a factor In the expression 2^3 means $2 \cdot 2 \cdot 2$. 3 is the exponent.

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Number Theory	Exponential Form	<p><u>Writing a number using exponents</u></p> <p>The exponential form of 16 is 2^4. The exponential form of 25 is 5^2.</p>				
Number Theory	Factor	<p><u>The numbers that go evenly into another number</u></p> <p>Example: 1, 2, 4, 6, 12 are factors of 24</p>				
Number Theory	Identity Property of Addition	<p><u>Adding Zero does not change the sum</u></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;">Arithmetic</td> <td style="text-align: center; width: 50%;">Algebra</td> </tr> <tr> <td style="text-align: center;">$3.2 + 0 = 3.2$</td> <td style="text-align: center;">$a + 0 = a$</td> </tr> </table>	Arithmetic	Algebra	$3.2 + 0 = 3.2$	$a + 0 = a$
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$3.2 + 0 = 3.2$	$a + 0 = a$					
Number Theory	Identity Property of Multiplication	<p><u>The product of 1 and any number is that number</u></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 50%;">Arithmetic</td> <td style="text-align: center; width: 50%;">Algebra</td> </tr> <tr> <td style="text-align: center;">$5.6 * 1 = 5.6$</td> <td style="text-align: center;">$a * 1 = a$</td> </tr> </table>	Arithmetic	Algebra	$5.6 * 1 = 5.6$	$a * 1 = a$
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Number Theory	Numerical Expression	<p><u>A math problem that does not have the answer written</u></p> <p>Examples: $23 \cdot 2$ $49/7$ $18 + 6$ $92 - 81$</p>				
Number Theory	Order of Operations	<p><u>The order that you do each operation such as multiplication, division etc..</u></p> <ol style="list-style-type: none"> 1) In the problem: $3(2 + 3)^2 + 6 - 8 / 2 =$ 2) You would do all operations inside parenthesis first = $2 + 3 = 5$ $3(5)^2 + 6 - 8 / 2 =$ 3) The second operation would be to find exponents from left to right: $3 \cdot 25 + 6 - 8 / 2 =$ 4) The next operation would be to multiply and divide from left to right. $75 + 6 - 4 =$ 5) Finally, you add and subtract from left to right. $81 - 4 = 77$ 				
Number Theory	Product	<u>The answer you get when you multiply</u>				
Number Theory	Quotient	<u>The answer you get when you divide</u>				

Subject Area	Word	Definition
Number Theory	Scientific Notation	<p><u>A way scientist write large numbers using two factors - The first factor consists of a number greater than or equal to 1 and less than 10. The second factor is a power of 10.</u></p> <p>How to convert from standard form to scientific notation.</p> <ol style="list-style-type: none"> 1. Write the number in standard form: EXAMPLE: 12453 2. Move the decimal so that it is one number to the right of the first digit. (You are dividing by 10 each time you move the decimal) EXAMPLE: 1.2353 3. Count how many times you moved the decimal. In the example above, the decimal was moved 4 times. 4. Write out the new number and then put times ten to the power of how many times the decimal was moved. EXAMPLE: 1.2353×10^4
Number Theory	Standard Form	<p><u>The way any number is written using digits</u></p> <p>How to convert from scientific notation to standard form:</p> <ol style="list-style-type: none"> 1) Write the number down in scientific notation. Example: 1.2353×10^4 2) Look at the exponent for the 10. Example: 4 3) Move the decimal to the right the same number of spaces. <div style="text-align: center;">  </div>
Number Theory	Sum	<u>The answer you get after you add</u>
Number Theory	Zero Property	<p><u>The product of zero and any number is zero</u></p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Arithmetic</p> <p>$2 \bullet 0 = 0$</p> </div> <div style="text-align: center;"> <p>Algebra</p> <p>$a \bullet 0 = 0$</p> </div> </div>