

Name _____

Algebra 2
Lesson 1-2
Algebraic Expressions

In Algebra 1, you learned the key words to addition, subtraction, multiplication and division:

ADDITION	SUBTRACTION	MULTIPLICATION	DIVISION
plus	minus	product	quotient
add	difference	times	ratio
increase	decrease	square	per

You also learned to use the order of operations to evaluate expressions: P-E-M-D-A-S (please excuse my dear Aunt Sally). Let's not forget simplifying expressions by combining "like" terms.

All of these ideas interact with each other to simplify and evaluate algebraic expressions.

Example: Write an algebraic expression for
"The cost of a movie tickets (m) at \$9.50 each."

Example: Evaluate: $n^2 - 3ny + y^2$, when $n=4$ and $y= -2$

Example: A cell phone plan charges \$45.50 for activation, text messaging, and the first 350 minutes. After that, it charges \$0.10 per minute. How much will a person be charged if he used 725 minutes?

Example: Simplify the expression by combining like terms:
 $3(a^2 + 6ab + b^2) + 3a^2 - 4ab - 2b^2$

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Algebra 2
Problem set 1-2

<p>1. Translate into an algebraic expression.</p> <p>a) The area of a rectangle is the product of length and width.</p> <p>b) The square of n is decreased by twice a number k.</p> <p>c) The number of \$0.41 postage stamps one can buy with k dollars.</p>	<p>8. A 15-foot by 12-foot rectangular patio will cost \$19.50 per square foot to build. To pay for the project, Joe acquired a loan that requires him to pay \$165.25 per month. How many payments will Joe have to make to pay off the loan?</p>
<p>2. Evaluate $3n + 2y^2$ when $n = -5, y = 3$</p> <p>3. Evaluate $\frac{5n - y^3}{nc^2}$ when $n = -2, y = -4,$ and $c = 3$.</p> <p>4. Evaluate $2k(x - 3n^2k^5 + 4)$ when $k = 3, n = 0, x = -1$</p>	<p>9a. Write an expression for the perimeter of the figure shown below.</p> <div style="text-align: center; margin: 10px 0;"> </div> <p>9b. If the value of $a = 2$ and $b = 3$, find the perimeter of the figure above.</p>
<p>5. Simplify $3n - 2x + 5y - 5x + n - 6y$</p> <p>6. Simplify $-2(3x - 5y) + 5(x + 3y)$</p>	<p>10. The first man made satellite to orbit the earth was the Russian made satellite Sputnik 1, on October 6, 1957. Sputnik orbited the earth every 96 minutes.</p> <p>a) How many orbits did Sputnik make in one day?</p>
<p>7. A cell phone plan costs \$65.50 a month for 500 minutes and charges \$0.11 per minute for minutes over 500. This month's phone bill had 750 minutes. How much does this person have to pay this month?</p>	<p>b) Sputnik 1 was in orbit 96 days before it reentered the earth's atmosphere and burned up. How many orbits did Sputnik make in its 96 day life span?</p>