

Pre-Algebra

Unit 4 Review - Expressions **KEY**

1.) For each expression, identify how many terms the expression has, the constant of the expression, and the coefficient.

Expression:	$2x + 1$	$5x^2 - 2$	$3xy$	$x$	$-x$
# of Terms:	2	2	1	1	1
Constant:	1	-2	0	0	0
Coefficient	2	5	3	1	-1

2.) Write an expression for each verbal phrase listed below.

a) Twice the sum of a number and 16.  $2(x + 16)$

b) Five less than a number m.  $m - 5$

c) The quotient of four times b and six.  $4b \div 6$

d) 12 subtracted from a number x.  $x - 12$  } from is 1st

e) From 12, subtract x.  $12 - x$

f) The cost of b apples if each apple cost \$0.89.  $0.89b$

g) If the cost of candy apples is represented by x dollars and three friends are splitting the cost evenly, write an expression to represent the amount of money each person owes.  $x \div 3$  or  $\frac{x}{3}$

h) The cost of tickets at the school play are different for adults and students. For adults, a, each ticket is \$10.00. For children, c, each ticket is \$7.00. Write an expression that represents the amount of money collected from both adults and children.  $10a + 7c$

3.) . Simplify each expression completely.

<p>a. <math>-2.1x + 6y - 6.1x + 4y</math></p> <p><u><math>-8.2x + 10y</math></u></p>	<p>b. <math>2 - 1(x + 9)</math></p> <p><math>2 - 1x - 9</math></p> <p><u><math>-1x - 7</math></u> or <u><math>-7 - 1x</math></u></p>
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<p>c. <math>\frac{1}{4}(16m - 20) - 2m + 5</math>  <math>4m - 5 - 2m + 5</math>  <span style="border: 1px solid black; padding: 2px;"><math>2m</math></span></p>	<p>d. <math>-2(6x) - 5(3x)</math>  <math>-12x - 15x</math>  <span style="border: 1px solid black; padding: 2px;"><math>-27x</math></span></p>
<p>e. <math>\frac{2}{3}a - 1 + 6a</math>  <span style="border: 1px solid black; padding: 2px;"><math>6\frac{2}{3}a - 1</math></span></p>	<p>f. <math>9(x - 5) - (2x - 5)</math>  <math>9x - 45 - 2x + 5</math>  <span style="border: 1px solid black; padding: 2px;"><math>7x - 40</math></span></p>

For #'s 4 and 5, state the property that justifies each step.

4.  $5(3a + 4) + 2$

$15a + 20 + 2$  distributive prop

$15a + (20 + 2)$  associative prop.

$15a + 22$

5.  $-3(4x - 2) + 12x$

$-12x + 6 + 12x$  distributive prop.

$-12x + 12x + 6$  commutative prop.

$0 + 6$  inverse prop.

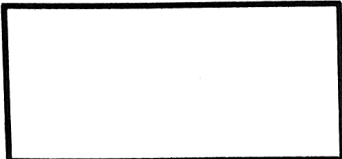
$6$  identity prop.

6. Consider the rectangle pictured to the right. Express the area and perimeter as an algebraic expression in simplest form.

Perimeter

$2 + 2 + x + 5 + x + 5$

$2x + 14$  units



Area

$2(x + 5)$

$2x + 10$  sq. units

7. Write a simplified expression when  $4x - 1$  is subtracted from  $2x + 5$ .

$(2x + 5) - (4x - 1)$

$2x + 5 - 4x + 1$

$-2x + 6$

Are  $7x$  and  $6x^2$  like terms? Explain

No because the exponents are not the same.