

(Must be Complete, Work shown, then Corrected and Work Fixed prior to test)

Students should be able to do the following:

1) Evaluate algebraic expressions for any given rational number

Evaluate $4a - 2b^2$ if $a = \frac{3}{4}$ and $b = -3$

2) Identify & use the vocabulary: coefficient, constant, term, like terms

Circle the examples of like terms:

x and 8x

9y and 2y²

3 and 3x

7x and 6y

8 and -1

5ab and -3ab

True or False ? For the algebraic expression $7x - 2 + 5y - 6x$

___ 7 is a coefficient

___ 5 is a constant

___ -2 is a constant

___ 6 is a coefficient

___ There are three terms

Write an algebraic expression with the following characteristics:
three terms
two like terms
a constant of 5
a coefficient of -3

ANSWERS VARY

3) Write and interpret algebraic expressions from words and from situations

Write algebraic expressions for the following:

- _____ three less than a number "n"
- _____ the total cost of renting bowling shoes for \$3 and playing "g" games for \$4 per game
- _____ the number of inches in "f" feet
- _____ the sale price of a pair of jeans that is marked 25% off a regular price of "j" dollars
- _____ the total amount of cents if you have "q" quarters and "d" dimes

Write a simplified algebraic expression for the perimeter of a rectangle whose length is $(2x + 3)$ and width is $(x + 2)$

Aaron is $(5x + 2)$ inches tall and Ben is $(8x - 3)$ inches tall. Write a simplified algebraic expression for how much taller Ben is than Aaron.

Sara jogged n miles. Meg jogged twice as much as Sara and Jen jogged three more than twice as much as Sara. Write a simplified algebraic expression that shows how many miles they jogged altogether. Show step by step how you arrive at your final answer.

4) Use the distributive property and the principal of adding/subtracting like terms to simplify algebraic expressions. Show all steps discussed in class.

Simplify

$7x + x$	$(6x + 2) + 2(4x + 1)$	$6x - y + 9 - 8x - 2y$
$3(2x + 4)$	$4 - (3x - 2) + 8x$	$-8(x + 2) - 4(5x - 3)$

5) Use the distributive property to do mental math

$7(8.99)$	$4(36)$	$2(4\frac{1}{2})$
-----------	---------	-------------------

6) Find the GCF and factor linear expressions.

Factor completely if possible: _____ $16x + 8x^2$
_____ $15x + 3$
_____ $4x + 7y$
_____ $\frac{2}{3}x + 24$

Find the GCF of the following pairs of monomials $6ab, 15a$ _____
 $9b^2, 14b$ _____
 $64xy^2, 48x^2y$ _____

7) Recognize equivalent expressions and be able to show how they are equivalent.
Circle the equivalent expressions. Show how you know they are equivalent.

$$7x - 1 = 1 - 7x$$

$$-1x = -x$$

$$8 + (4 + 3) = 8(4) + 8(3)$$

$$9x + -2 = 9x - 2$$

$$-4 - y = -1(y - 4)$$

$$-5x + 3 = 3 - 5x$$

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

8) Simplify algebraic expressions completely by showing all steps shown in class.

A) $-7x + 2x + 10 + x$

B) $(6x - 2) - (-5x + 7)$

C) $4 + 6(-2x + 5)$

D) $-x - 4x - 8 - 3x - 7$

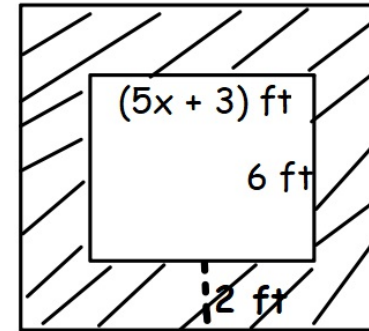
E) $-5(x - 3) - 6(2x - 4)$

F) $10x + 2(-7x + 1)$

G) $-\frac{3}{4}(a + 2) + \left(\frac{2}{3}a - 8\right) - \frac{3}{8}(-4a + 16)$

9) Solve application problems that involve percents.

A) Find the area of the shaded region.



The shaded area has a width of 2 ft all the way around.

B) The area of a square is $8x + 12$ square units.
Find all possible dimensions that do not involve fractions.

C) The perimeter of a square is $24x - 16$.
Find the length of one side of the square.

10) Be able to show the mathematics behind "math magic" problems.
Follow these steps with a number of your choice and then let the number be n and show how it works algebraically.

	<u>Number Example</u>	<u>Algebraic Steps</u>
Choose a number		

Add 8		

Multiply by 6		

Subtract 12		

Divide by 6		

Subtract the original number		
