

NAME: _____ DATE: _____ PERIOD: _____

For each number, place a check in the column that the number belongs to. Remember the numbers may belong to more than one set.

#	Number	Real	Whole	Natural	Integer	Rational	Irrational
4)	-9						
5)	4						
6)	$\sqrt{81}$						
7)	$\frac{2}{5}$						
8)	$\frac{\sqrt{10}}{2}$						
9)	0						
10)	$\frac{-\sqrt{4}}{2}$						
11)	$3p + 1$						

Name the property of real numbers illustrated by each equation.

12) $5(x + 2y) = 5x + 10y$

15) $(ab)c = a(bc)$

13) $a + b = a + (-b)$

16) $-(-a) = a$

14) $a + (-a) = 0$

17) $m + 4.5 = 4.5 + m$

Write an algebraic expression that models each word phrase.

18) 4 times the sum of 7 and a number d .21) The product of 12 and sum of x and y .19) Half of the difference of a and b .22) 3 times the sum of x and y .20) The absolute value of the sum of $3x$ and 25.23) The product of 12 and the difference of 3 and a number w .

Evaluate each expression for the given values of the variable.

24) $2x + 4y - (3x + 2y)$ for $x = 1$ and $y = \frac{1}{2}$

26) $\frac{x(2x^2 - 3)}{x - 1}$ for $x = -2$

25) $-5(x + 2y) + 15(x + 2y)$ for $x = 7$ and $y = -7$

27) $y(3xyz - 3x + 2z)$ for $x=4$, $y=0$ & $z=6$

Simplify by combining like terms.

28) $4a^2 + 3ab - 2a$

30) $9x^3 + 4x^2 + -3x - 10x^3 - 4x^2 + 13x + 13$

29) $-(x - 2x - 3)$

31) $-(3x - 4y) + 10y - 4x$

Write an algebraic expression to model the situation.

32) Lilly has \$417 and is earning \$50 each week for math tutoring.

33) You have 16 tomato plants. Your tomato plants each produce 5 tomatoes a day.