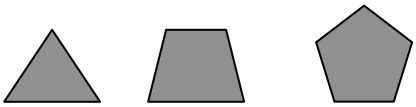
ALGEBRA 2 **UNIT 1 – EXPRESSION, EQUATIONS, AND INEQUALITIES** **QUIZ 1.1-1.3**

NAME: ____ANSWER KEY_____ DATE: _____ PERIOD: _____

Use the following figures to answer problems #1-3.



1) Draw the next figure in the pattern.

2) Describe the how many sides are in the 20th figure. Use a table of values with a process column to justify your answer.

22 sides

3) What expression describes the number of sides in the *nth* figure?

$n + 2$

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)	$3\pi + 1$	✔					✔

Name the property of real numbers illustrated by each equation.

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

Distributive Property

13) $m + 4.5 = 4.5 + m$

Commutative Property

Identify the pattern and find the next two numbers in the pattern.

14) $32, 16, 8, 4, \ldots$

Divide by 2; 2, 1

15) $\frac{3}{4}, \frac{6}{5}, \frac{9}{6}, \frac{12}{7}, \ldots$

Add 3 to the numerator & add 1 to the denominator; $\frac{15}{8}, \frac{18}{9}$

Write an algebraic expression that models each word phrase.

16) 4 times the sum of 7 and a number d.

$4(d + 7)$

17) The product of 12 and the difference of 3 and a number w.

$12(3 - w)$

Evaluate each expression for the given values of the variable.

18) $2x + 4y - (3x + 2y)$ for $x = 1$ and $y = \frac{1}{2}$

0

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

$\frac{2}{3}$

Simplify by combining like terms.

20) $4a^2 + 3ab - 2a^2$

$2a^2 + 3ab$

21) $-(x - 2x - 3)$

$x + 3$

Write an algebraic expression to model the situation.

22) Alyssa has \$417 and is earning \$50 each week for math tutoring.

$50w + 417$