Foundations for College Algebra
Fall 2016
Quiz #3

Name: Key **Date:** September 7, 2016

1. Use the chart below to place a check mark indicating which sets the item on the left is a member of.

	$\mathbb{N}$	$\mathbb{W}$	$\mathbb{Z}$	$\mathbb{Q}$	$\mathbb{Q}'$	$\mathbb{R}$
$\sqrt{25}$	✓	✓	✓	✓		✓
-0.0001				✓		✓
$\frac{8}{0}$						
-2			✓	✓		✓
$5.\overline{56}$				✓		✓

Note: $\mathbb{Q}'$ means the set of not Rational Numbers or Irrational!

2. What is the key idea of the *Associative tool*?

order does not change, but association changes, but the result is not changed.

3. Review the Algebraic expression below (i.) and state the sequence of ***tools*** used to simplify the expression (ii,iii,iv):

i. $3x + 2(x - 5) + 4x$ _____
ii. $3x + 2x - 10 + 4x$ Distribution
iii. $3x + 2x + 4x - 10$ Commutative
iv. $9x - 10$ Association

4. Use the "meaning" of exponents to evaluate the following: -2^4

$$
\begin{aligned}
-2^4 &= (-1)\cdot 2^4 \\
&= (-1)\cdot 2\cdot 2\cdot 2\cdot 2 \\
&= (-2)\cdot 2\cdot 2\cdot 2 \\
&= (-4)\cdot 2\cdot 2 \\
&= (-8)\cdot 2 \\
&= -16
\end{aligned}
$$

5. Covert the following repeating decimal to a fraction: $-0.\overline{27}$

Let $x = -0.\overline{27}$

$100(x = -0.\overline{27})$

$100x = -27.\overline{27}$

$-x = \quad\quad .\overline{27}$

$99x = -27$

$x = -\frac{27}{99}$

$$\boxed{x = -\frac{3}{11}}$$