Math 0097
University of North Georgia
Spring 2015
Exam #1

Name: Key Date: February 23, 2015

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

	$\mathbb{N}$	$\mathbb{W}$	$\mathbb{Z}$	$\mathbb{Q}$	$\mathbb{Q}'$	$\mathbb{R}$
.16				✓		✓
$-\sqrt{5}$					✓	✓
$\frac{2}{7}$				✓		✓
-9			✓	✓		✓
0		✓	✓	✓		✓

2. Simply the fraction $\frac{76}{240}$ by writing the numerator and denominator as a product of **primes** and dividing out the "ones".

$76 = 2 \cdot 38 = 2 \cdot 2 \cdot 19$

$240 = 2 \cdot 120 = 2 \cdot 2 \cdot 60 = 2 \cdot 2 \cdot 2 \cdot 30 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 15 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3 \cdot 5$

$$\frac{76}{240} = \frac{\cancel{2} \cdot \cancel{2} \cdot 19}{\cancel{2} \cdot \cancel{2} \cdot 2 \cdot 2 \cdot 3 \cdot 5} = \boxed{\frac{19}{60}}$$

3. Convert the Non-Terminating decimal, $0.\overline{882}$ in to a fraction.

Let $x = 0.\overline{882}$

$1000x = 882.\overline{882}$

$-\quad x = 0.\overline{882}$

$999x = 882$

$$x = \frac{882}{999} = \frac{9 \cdot 98}{9 \cdot 111} = \boxed{\frac{98}{111}}$$

4. Use ***Order of Operations*** to simply and replace " ? " with $<, >, \leq, or \geq$ to make a true statement.

$(12-3^3)-12\cdot 5 \quad ? \quad -(100\div 5^2)^2-72\div(-6)^2$

$(12-27)-12\cdot 5 \quad ? \quad -(100\div 25)^2-72\div(-6)^2$

$(-15)-12\cdot 5 \quad ? \quad -(4)^2-72\div 36$

$(-15)-60 \quad ? \quad -16-72\div 36$

$-75 \quad ? \quad -16-2$

$\boxed{-75 < -18}$

5. Below is an equation which is being solved for "x" For each line **(a, b, c, & d)** an ***Algebra Power Tool*** was used from the line above it. Determine and then state what ***Tool*** was used to generate the result of each line.

$3(-4x+5)-2x=8$

a.) $-12x+15-2x=8$ Distributive

b.) $-14x+15=8$ Commutative / Associative / add

c.) $-14x=-7$ additive Inverse

d.) $x=\frac{1}{2}$ Multiplicative Inverse

6. Round **5,846,994** to the ten-thousands.

1st

$\boxed{5,850,000}$

7. Assume $x < y$. Is it possible for ***Round*** $(x) \geq$ ***Round*** (y)? **EXPLAIN.**

yes. If $x = 26$ and $y = 28$, then $26 < 28$. But $30 \geq 30$.

8. Shirlana loses four blackjack hands in which she bet \$7.00 for each hand. How much money did she lose? If she started with \$40.00, how much does she now have?

Shirlana lost $4 \cdot \$7.00 = \$28.00$

She now has $\$40.00 - \$28.00 = \$12.00$

9. There are **no** integers, let's call them x, such that $|x| \leq 0$. True or False. **EXPLAIN.**

True, because, by definition, absolute value means distance from zero and distance is always positive.

10. For both fractions, find an ***Equivalent*** fraction with the given denominator. For each, show the "one" that is needed.

$\frac{7}{9} \cdot \frac{6}{6} = \boxed{\frac{42}{54}}$ and $\frac{5}{6} \cdot \frac{9}{9} = \boxed{\frac{45}{54}}$