Math 1020, Quiz #2, Fall 2013   Name ____KEY____

Instructions: Show all work. Give exact answers (improper fractions) and do no round unless specifically asked to do so. If you work the problem in your calculator you can write keystrokes to show work for partial credit.

1. For the set of numbers $\left\{\frac{14}{19}, 0, -7, \frac{1}{\sqrt{3}}, 1.35, 15, \frac{\pi}{e}, \frac{32}{8}, 9.12162432\ldots, -\sqrt{\frac{9}{16}}\right\}$ determine which numbers belong to each set.

   a. Natural numbers $\left\{15, \frac{32}{8}=4\right\}$

   b. Integers $\left\{0, -7, 15, \frac{32}{8}\right\}$

   c. Rational Numbers $\left\{\frac{14}{19}, 1.35, 0, -7, 15, \frac{32}{8}, -\sqrt{\frac{9}{16}}=-\frac{3}{4}\right\}$

   d. Irrational numbers $\left\{\frac{1}{\sqrt{3}}, \frac{\pi}{e}, 9.12162432\ldots\right\}$

2. The expression $\frac{2}{3} + \left(-\frac{1}{5}\right) \cdot 5 + \left(-\frac{2}{3}\right)$ can be reduced using three properties of real numbers. What are those properties? Use them to simplify the expression.

   $\frac{1}{5} \cdot 5 = 1$ by multiplicative identity

   $\frac{2}{3} + \frac{-2}{3} = 0$ by additive identity

   \$ order changed by commutative property

   $\frac{2}{3} + \left(-\frac{2}{3}\right) + (-1)\left(\frac{1}{5}\right)(5) = 0 + (-1)(1) = \boxed{-1}$