MATD 0370 – Elementary Algebra – Summer   Name_____

Written Homework #1 - Show all work to receive credit

Expression or Equation (Section 1.1)

Classify each of the following as an expression or equation.

1) a) $10x - 5$ b) $56 = 4(y+3)$ c) $s(w-8)+7$

Translating to Algebraic Expressions and Equations (Section 1.1)

Translate each phrase to an algebraic expression or equation

2) Four less than ten times a number _____

3) Twice the sum of two numbers is 48 _____

Operations with Fractions (Sections 1.3, 1.5, 1.6, 1.7)

4) Subtract and simplify. Show your work. $\dfrac{5}{6} - \dfrac{4}{15}$

5) Add and simplify. Show your work. $-\dfrac{2}{5} + \dfrac{1}{3}$

6) What number is its own reciprocal? _____

7) Division by what number is undefined? _____

8) Divide and simplify. Show your work. $\dfrac{12}{25} \div \left(-\dfrac{32}{60}\right)$

Operations with Real Numbers (Sections 1.5, 1.6, 1.7)

9) Simplify. Show your work. $16 - (-12) - 1 - (-2) + 3$

Exponents and Order of Operations (Section 1.8)

10) Simplify. Show your work. $5 - 2\left(9 \div 3 \cdot 2 - 3^2\right) - (-2)^4$

Equations: Identities and Contradictions (Sections 2.1, 2.2)

Some equations, like $3 = 7$ or $x + 2 = x + 5$, have no solution and are called **contradictions.** Other equations, like $7 = 7$ or $2x = 2x$, are true for all numbers and are called **identities.**

Solve each of the following and **if a contradiction or identity is found, state this.** Make sure you show each step when solving the equation.

11) $4x - x = 2x + x$

12) $5(x - 7) = 3(x - 2) + 2x$