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Date: _____ **Class Time:** _____

Unit 4 Module A Notes Sections 12.1 – 12.3

View the PowerPoint, Videos, or Textbook for Module 4A.

Vocabulary ***Fill in the blanks.***

1. (Section 12.1) The _____ principle states that for any real numbers $a, b, and\ c, a = b$ is equivalent to $a + c = b + c$.

2. (Section 12.2) The _____ principle states that for any real numbers $a, b, and\ c, c \neq 0, a = b$ is equivalent to $a \cdot c = b \cdot c$.

3. (Section 12.2) The multiplicative _____ of $3\ is\ \frac{1}{3}$.

4. (Section 12.2) The multiplicative _____ is $1\ since\ 1 \cdot x = x$.

5. (Section 12.3) We multiply every term on both sides of an equation by the _____ of all denominators in order to clear fractions.

6. (Section 12.3) When solving an equation, if we end with a true equation, the equation has a(n) _____ number of solutions. If we end with a false equation the equation has _____ solution.

Problems ***Show ALL steps.***

1. (Section 12.1) Solve $a - 11 = -25$

2. (Section 12.2) Solve $-3x = 33$

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3. (Section 12.2) Solve $\frac{5}{2}x = 15$

4. (Section 12.3) Solve $\frac{x}{2} - 1 = \frac{2}{3}x - 3$ (Hint: Multiply by LCD)

5. (Section 12.3) Solve $-2(x-5) + 10 = -3(x+2) + x$

6. (Section 12.3) Suppose you have simplified several equations and obtain the following results. What can you conclude about the solutions to the original equation.

a. $7 = 7$ **b.** $x = 0$ **c.** $7 = -4$

a. _____ b. _____ c. _____