Study Guide
3.1-3.4 Quiz

3.1: Solve One-Step Equations
- Be able to use inverse operations to isolate the variable and solve one-step equations

Ex: $\frac{7}{2} \cdot \frac{2}{7}n = -5 \cdot \frac{7}{2}$

$n = -\frac{35}{2}$

Ex: $-5 + x = -4$

$\underline{+5 \quad\quad +5}$

$x = 1$

Ex: $1 - x = -2$

$\underline{-1 \quad\quad -1}$

$-x = -3$

$x = 3$

Ex: $\underline{-4x} = \underline{-16}$
$-4 \quad -4$

$x = 4$

Ex: $2 \cdot \frac{x}{2} = -4 \cdot 2$

$x = -8$

Ex: $x - 10 = -3$

$\underline{+10 \quad +10}$

$x = 7$

Ex: $\underline{9x} = \underline{3}$
$9 \quad\; 9$

$x = \frac{1}{3}$

Ex: $\underline{4x} = \underline{7}$
$4 \quad\; 4$

$x = \frac{7}{4}$

Ex: $\underline{-2x} = \underline{5}$
$-2 \;\; -2$

$x = -\frac{5}{2}$

**These answers should be left as reduced improper fractions.

3.2/3.3: Solve 2/Multi-Step Equations
- **Be able to use inverse operations and reverse PEMDAS to solve multi-step equations**

Ex: $4w + 2w = 24$

$$\frac{6w}{6} = \frac{24}{6}$$

$w = 4$

Ex: $\dfrac{x}{2} + 5 = 11$

$$\frac{-5 \quad -5}{\dfrac{x}{2} = 6}$$

$\cdot 2 \quad \cdot 2$

$x = 12$

Ex: $5x - 4(x - 3) = 17$

$5x + -4(x + -3) = 17$

$5x + -4x + 12 = 17$

$1x + 12 = 17$

$$\frac{-12 \quad -12}{x = 5}$$

Ex: $\dfrac{4}{3} \cdot \dfrac{3}{4}(z - 6) = 12 \cdot \dfrac{4}{3}$

$z - 6 = 16$

$$\frac{+6 \quad +6}{z = 22}$$

Ex: $-4 = 2(x - 2) - 3(1 - x)$

$-4 = 2(x + -2) + -3(1 + -x)$

$-4 = 2x + -4 + -3 + 3x$

$-4 = 5x + -7$

$$\frac{3}{5} = \frac{5x}{5}$$

$x = \dfrac{3}{5}$

*Don't forget to rewrite subtraction as adding a negative BEFORE distributing!!

- **Be able to write and solve an equation to model real-world situations.**

Ex: To join a local gym you must pay a one-time membership fee of $50. Each month you go you must also pay a monthly fee of $15. One gym member paid a total of $125. Write and solve an equation to determine the number of months this member attended the gym. Be sure to identify a variable and what it represents.

$x = $ # months

$125 = 15x + 50$

$$\frac{-50 \qquad -50}{75 = 15x}$$

$$\frac{75}{15} = \frac{15x}{15}$$

$5 = x$