Study Guide

3.1-3.3 Quiz

3.1: Solve One-Step Equations

- Be able to use inverse operations to isolate the variable and solve one-step equations

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

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

$n = -17\frac{1}{2}$

Ex: $-5 + x = -4$

$+5 \quad +5$

$x = 1$

Ex: $1 - x = -2$

$-1 \quad -1$

$-x = -3$

$x = 3$

Ex: $\frac{-4x}{-4} = \frac{-16}{-4}$

$x = 4$

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

$x = -8$

Ex: $x - 10 = -3$

$+10 \quad +10$

$x = 7$

Ex: $\frac{9x}{9} = \frac{3}{9}$

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

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

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

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

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

**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: $\frac{x}{2}+5=11$

$\frac{-5 \quad -5}{}$

$\frac{x}{2} = 6$

$x = 12$

Ex: $-4x + 5 = 21$

$\frac{-5 \quad -5}{}$

$\frac{-4x}{-4} = \frac{16}{-4}$

$x = -4$

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

$5x + 12 - 4x = 17$

$x + 12 = 17$

$x = 5$

Ex: $2x + 7 = 5$

$\frac{-7 \quad -7}{}$

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

$x = -1$

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

$z - 6 = 16$

$\frac{+6 \quad +6}{}$

$z = 22$

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

Rewrite first as: $-4 = 2(x - 2) + -3(1 + -x)$

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

$-4 = 5x - 7$ (Combine)

$\frac{+7 \quad +7}{}$

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

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