Name: Key Per A B C D E F Date _____

M3-T1-L3 HW: Multi-Step Equations with Variables on Both Sides

1-9: Solve each multi-step equation. SHOW ALL YOUR WORK.

1. $8x - 2 = -9 + 7x$

$-7x \quad -7x$

$x - 2 = -9$

$+2 \quad +2$

$x = -7$

2. $a + 5 = -5a + 5$

$+5a \quad +5a$

$6a + 5 = 5$

$-5 \quad -5$

$\frac{6a}{6} = \frac{0}{6}$

$a = 0$

3. $5p - 14 = 8p + 4$

$-5p \quad -5p$

$-14 = 3p + 4$

$-4 \quad -4$

$\frac{-18}{3} = \frac{3p}{3}$

$-6 = p$

4. $p - 1 = 5p + 3p - 8$

$p - 1 = 8p - 8$

$-p \quad -p$

$-1 = 7p - 8$

$+8 \quad +8$

$\frac{7}{7} = \frac{7p}{7}$

$1 = p$

5. $\frac{x}{3} - 2 = 4$

$+2 \quad +2$

$\frac{3 \cdot x}{3} = 6 \cdot 3$

$x = 18$

6. $\frac{8}{7}x + 1 = -80$

$-1 \quad -1$

$\frac{7}{8} \cdot \frac{8}{7}x = -81 \cdot \frac{7}{8}$

$x = -\frac{567}{8}$

7. $-18 - 6k = 6(1 + 3k)$

$-18 - 6k = 6 + 18k$

$+6k \quad +6k$

$-18 = 6 + 24k$

$-6 \quad -6$

$\frac{-24}{24} = \frac{24k}{24}$

$-1 = k$

8. $5n + 34 = -2(1 - 7n)$

$5n + 34 = -2 + 14n$

$-5n \quad -5n$

$34 = -2 + 9n$

$+2 \quad +2$

$\frac{36}{9} = \frac{9n}{9}$

$4 = n$

9. $-3(4x + 3) + 4(6x + 1) = 43$

$-12x - 9 + 24x + 4 = 43$

$12x - 5 = 43$

$+5 \quad +5$

$\frac{12x}{12} = \frac{48}{12}$

$x = 4$