Name: Key	Class: 7-1, 8-2
Topic: Variables on Both Sides	Date: 10/1

Main Ideas/Questions	Notes
Steps	✓ **Step 1:** Distribute if needed. ✓ **Step 2:** Simplify each side of the equation. ✓ **Step 3:** Move all variables terms to one side. ✓ **Step 4:** Solve the remaining 2-step equation.

Examples

ANSWERS:

1. $y = 10$
2. $x = -1$
3. $m = -7$
4. $d = -11$
5. $u = -2$
6. $w = 3$

1. $5y - 8 = 3y + 12$

$-3y \quad -3y$

$2y - 8 = 12$

$+8 \quad +8$

$\frac{2y}{2} = \frac{20}{2}$

$y = 10$

2. $-6x + 14 = 12 - 8x$

$+8x \quad +8x$

$2x + 14 = 12$

$-14 \quad -14$

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

$x = -1$

3. $9m = 4m - 35$

$-4m \quad -4m$

$\frac{5m}{5} = \frac{-35}{5}$

$m = -7$

4. $10 - d = -34 - 5d$

$+5d \quad +5d$

$10 + 4d = -34$

$-10 \quad -10$

$\frac{4d}{4} = \frac{-44}{4}$

$d = -11$

5. $7 - 6u = 5u + 29$

$-5u \quad -5u$

$7 - 11u = 29$

$-7 \quad -7$

$\frac{-11u}{-11} = \frac{22}{-11}$

$u = -2$

6. $4(2w - 1) = -10(w - 5)$

$8w - 4 = -10w + 50$

$+10w \quad +10w$

$18w - 4 = 50$

$+4 \quad +4$

$\frac{18w}{18} = \frac{54}{18}$

$w = 3$

ANSWERS:

7. $x=10$
8. $m=-5$
9. $x=5$
10. $x=-6$

7. $6(x-1)=9(x-4)$

$6x-6=9x-36$

$-9x \quad -9x$

$-3x-6=-36$

$+6 \quad +6$

$\frac{-3x}{-3}=\frac{-30}{-3}$ $x=10$

8. $5(m+3)+7m=3(m-10)$

$5m+15+7m=3m-30$

$12m+15=3m-30$

$-3m \quad -3m$

$9m+15=-30$

$-15 \quad -15$

$\frac{9m}{9}=\frac{-45}{9}$ $m=-5$

9. $5x-(x+4)=10-2(x-8)$

$5x-x-4=10-2x+16$

$4x-4=-2x+26$

$+2x \quad +2x$

$6x-4=26$

$+4 \quad +4$

$\frac{6x}{6}=\frac{30}{6}$ $x=5$

10. $8(x-1)-2x=-(x+50)$

$8x-8-2x=-x-50$

$6x-8=-x-50$

$+x \quad +x$

$7x-8=-50$

$+8 \quad +8$

$\frac{7x}{7}=\frac{-42}{7}$ $x=-6$