

2-4 Skills Practice**Solving Equations with the Variable on Each Side****Justify each step.**

1. $4k - 3 = 2k + 5$

$4k - 3 - 2k = 2k + 5 - 2k$

$2k - 3 = 5$

$2k - 3 + 3 = 5 + 3$

$2k = 8$

$\frac{2k}{2} = \frac{8}{2}$

$k = 4$

a. Subtract $2k$ from each side.b. Simplify.c. Add 3 to each side.d. Simplify.e. Divide each side by 2.f. Simplify.

2. $2(8u + 2) = 3(2u - 7)$

$16u + 4 = 6u - 21$

$16u + 4 - 6u = 6u - 21 - 6u$

$10u + 4 = -21$

$10u + 4 - 4 = -21 - 4$

$10u = -25$

$\frac{10u}{10} = \frac{-25}{10}$

$u = -2.5$

a. Distributive Propertyb. Subtract $6u$ from each side.c. Simplify.d. Subtract 4 from each side.e. Simplify.f. Divide each side by 10.g. Simplify.**Solve each equation. Check your solution.**

3. $2m + 12 = 3m - 31$ **43**

5. $7a - 3 = 3 - 2a$ $\frac{2}{3}$

7. $4x - 9 = 7x + 12$ **-7**

9. $5 + 3r = 5r - 19$ **12**

11. $8q + 12 = 4(3 + 2q)$ **all numbers**

13. $6(-3v + 1) = 5(-2v - 2)$ **2**

15. $3(8 - 3t) = 5(2 + t)$ **1**

17. $8(2f - 2) = 7(3f + 2)$ **-6**

19. $6(w - 1) = 3(3w + 5)$ **-7**

21. $\frac{2}{3}v - 6 = 6 - \frac{2}{3}v$ **9**

4. $2h - 8 = h + 17$ **25**

6. $4n - 12 = 12 - 4n$ **3**

8. $-6y - 3 = 3 - 6y$ **no solution**

10. $-9 + 8k = 7 + 4k$ **4**

12. $3(5j + 2) = 2(3j - 6)$ **-2**

14. $-7(2b - 4) = 5(-2b + 6)$ **-0.5 or $-\frac{1}{2}$**

16. $2(3u + 7) = -4(3 - 2u)$ **13**

18. $5(-6 - 3d) = 3(8 + 7d)$ **-1.5 or $-1\frac{1}{2}$**

20. $7(-3y + 2) = 8(3y - 2)$ $\frac{2}{3}$

22. $\frac{1}{2} - \frac{5}{8}x = \frac{7}{8}x + \frac{7}{2}$ **-2**