

Variables on both sides — ANSWER KEY

Solve. Collect the variable terms on one side first.

1. $9n - 4 = 8n - 10$

$n = \underline{\quad -6 \quad}$

2. $6k + 4 = 9k + 28$

$k = \underline{\quad -8 \quad}$

3. $6x - 8 = -x + 41$

$x = \underline{\quad 7 \quad}$

4. $6n = 8n - 14$

$n = \underline{\quad 7 \quad}$

5. $-5m - 11 = -2m - 41$

$m = \underline{\quad 10 \quad}$

6. $-8k = -9k - 2$

$k = \underline{\quad -2 \quad}$

7. $3k + 8 = 4k + 6$

$k = \underline{\quad 2 \quad}$

8. $5k - 12 = -5k - 2$

$k = \underline{\quad 1 \quad}$

9. $-5x - 7 = 6x + 37$

$x = \underline{\quad -4 \quad}$

10. $9m + 3 = 2m + 52$

$m = \underline{\quad 7 \quad}$

11. $9m + 6 = -2m + 6$

$m = \underline{\quad 0 \quad}$

12. $-x + 15 = -4x + 15$

$x = \underline{\quad 0 \quad}$

Distributive property — ANSWER KEY

Solve. Distribute first, then collect like terms.

1. $3(k + 9) = -3k - 15$

$k = \underline{\quad -7 \quad}$

2. $3(t - 1) + 12 = 6$

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

3. $-4(x - 9) - 2 = 38$

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

4. $-6(x - 8) = x + 34$

$x = \underline{\quad 2 \quad}$

5. $-2(k + 7) = -9k - 35$

$k = \underline{\quad -3 \quad}$

6. $-5(x + 8) = 4x + 41$

$x = \underline{\quad -9 \quad}$

7. $3(y - 1) = y - 15$

$y = \underline{\quad -6 \quad}$

8. $3(t + 8) = 7t + 52$

$t = \underline{\quad -7 \quad}$

9. $4(y - 2) - 7 = -19$

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

10. $-2(k + 8) - 2 = -18$

$k = \underline{\quad 0 \quad}$

11. $3(k - 5) = k - 33$

$k = \underline{\quad -9 \quad}$

12. $-2(t + 6) = -9t - 82$

$t = \underline{\quad -10 \quad}$

Combining like terms — ANSWER KEY

Solve. Combine like terms first.

1. $-y - 6 + 5y = 26$

$y = \underline{\quad 8 \quad}$

2. $k - 4 - 4k = 11$

$k = \underline{\quad -5 \quad}$

3. $7y + 5 - 2y = -5$

$y = \underline{\quad -2 \quad}$

4. $n + 6 - 4n = -3$

$n = \underline{\quad 3 \quad}$

5. $-6t + 4 - 6t = 4$

$t = \underline{\quad 0 \quad}$

6. $-2y + 10 + 5y = -5$

$y = \underline{\quad -5 \quad}$

7. $x + 13 - 3x = -3$

$x = \underline{\quad 8 \quad}$

8. $-m + 10 - 2m = 31$

$m = \underline{\quad -7 \quad}$

9. $7x - 5 - 3x = 27$

$x = \underline{\quad 8 \quad}$

10. $2x - 11 + 9x = 22$

$x = \underline{\quad 3 \quad}$

11. $7y - 1 - y = 5$

$y = \underline{\quad 1 \quad}$

12. $4t + 3 + 4t = 27$

$t = \underline{\quad 3 \quad}$

Number of solutions — ANSWER KEY

Solve. Write the solution, or say if there is no solution or infinitely many solutions.

1. $-4(x - 3) = 7x - 43$

Answer: **$x = 5$**

2. $5(k - 2) = 8k - 16$

Answer: **$k = 2$**

3. $-5(n + 9) = -5n - 45$

Answer: **infinitely many solutions**

4. $6(x - 2) = 7x - 10$

Answer: **$x = -2$**

5. $3(m - 8) = -6m - 51$

Answer: **$m = -3$**

6. $-2(k - 2) = -2k + 5$

Answer: **no solution**

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

Answer: **$k = 7$**

8. $-2(x - 2) = 8x + 54$

Answer: **$x = -5$**

9. $-3(n - 1) = -3n + 3$

Answer: **infinitely many solutions**

10. $-6(n + 6) = -6n - 30$

Answer: **no solution**

11. $-6(m - 1) = 7m - 98$

Answer: **$m = 8$**

12. $-6(m + 6) = -9m - 57$

Answer: **$m = -7$**