

Variables on both sides — ANSWER KEY

Solve. Collect the variable terms on one side first.

1. $9n - 12 = -7n - 44$

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

2. $5m - 3 = 6m - 13$

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

3. $4m - 7 = -9m + 45$

$m = \underline{\quad 4 \quad}$

4. $-9k - 2 = 3k + 46$

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

5. $-9t + 9 = 7t + 57$

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

6. $6m - 4 = 8m + 2$

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

7. $-2n + 14 = 5n + 21$

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

8. $4x - 12 = 8x - 52$

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

9. $-6n + 14 = n - 28$

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

10. $7m - 6 = -3m - 16$

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

11. $6k + 3 = 7k + 1$

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

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

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

Distributive property — ANSWER KEY

Solve. Distribute first, then collect like terms.

1. $-4(t + 2) = 2t - 50$

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

2. $2(n + 3) - 15 = -7$

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

3. $-6(m + 9) - 10 = -112$

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

4. $2(n - 2) = 8n + 56$

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

5. $-3(k + 3) + 12 = -15$

$k = \underline{\quad 6 \quad}$

6. $2(t - 9) = 7t - 28$

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

7. $2(n + 8) - 14 = -6$

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

8. $2(n + 4) = 4n - 2$

$n = \underline{\quad 5 \quad}$

9. $-6(y + 8) = y - 97$

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

10. $3(m - 9) = 8m - 12$

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

11. $-4(k - 7) = -k + 7$

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

12. $4(x - 7) = 5x - 20$

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

Combining like terms — ANSWER KEY

Solve. Combine like terms first.

1. $-x - 7 - 2x = 14$

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

2. $-4k - 6 + 2k = 10$

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

3. $-4n + 1 - n = 26$

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

4. $-t + 7 + 5t = 7$

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

5. $m + 10 + 4m = -10$

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

6. $-6y + 13 - y = -29$

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

7. $4n - 8 - 9n = 42$

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

8. $-5m + 8 - 8m = 73$

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

9. $7m + 2 + 4m = -31$

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

10. $7t - 8 + 5t = 64$

$t = \underline{\quad 6 \quad}$

11. $-9t + 6 + 3t = -42$

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

12. $4y + 8 - 8y = 12$

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

Number of solutions — ANSWER KEY

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

1. $-3(n - 8) = -7n + 28$

Answer: **$n = 1$**

2. $5(y - 4) = 5y - 23$

Answer: **no solution**

3. $-6(n + 8) = -6n - 48$

Answer: **infinitely many solutions**

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

Answer: **infinitely many solutions**

5. $2(k - 4) = 2k - 8$

Answer: **infinitely many solutions**

6. $3(t + 7) = -3t + 39$

Answer: **$t = 3$**

7. $-3(x + 9) = -3x - 28$

Answer: **no solution**

8. $-3(k + 6) = 3k - 24$

Answer: **$k = 1$**

9. $2(k - 9) = 3k - 19$

Answer: **$k = 1$**

10. $-4(x - 3) = -4x + 12$

Answer: **infinitely many solutions**

11. $6(k - 5) = -3k - 30$

Answer: **$k = 0$**

12. $-5(t + 3) = -5t - 15$

Answer: **infinitely many solutions**