

Free Algebra Survival Book

A beginner-friendly mini workbook with reminders, examples, practice, and an answer key.



Inside This Mini Book

- 1 Key Rules to Remember
- 2 Practice Set 1: Solving Equations
- 3 Practice Set 2: Signs & Distribution
- 4 Practice Set 3: Combining Like Terms & Mixed Review
- 5 Answer Key



Use this book to review, practice, and build confidence step by step.





Key Rules to Remember

These key rules will help you solve any equation with confidence. Keep them in mind as you practice!



1. Core Rules

- To solve an equation, get the variable by itself.
- Use inverse operations: addition \leftrightarrow subtraction and multiplication \leftrightarrow division.
- Whatever you do to one side, do to the other side.
- A negative outside parentheses changes every sign inside.



2. Worked Examples

1 $m - 9 = 14 \rightarrow$ add 9 to both sides $\rightarrow m = 23$

2 $6p = 42 \rightarrow$ divide both sides by 6 $\rightarrow p = 7$

3 $4x + 1 = 21 \rightarrow$ subtract 1, then divide by 4 $\rightarrow x = 5$



Tip: Show your steps and check your answer.





Practice Set 1: Solving Equations

Solve each equation. Show your steps neatly.



1. One-Step Equations

1) $n + 8 = 19$

2) $y - 12 = 5$

3) $7a = 56$

4) $b \div 5 = 9$



2. Two-Step Equations

5) $3x + 4 = 19$

6) $5m - 7 = 18$

7) $q \div 4 + 6 = 10$

8) $2r - 9 = 7$



Tip: Use inverse operations to isolate the variable.





Practice Set 2: Signs & Distribution



Simplify each expression carefully.



1. Negative Signs

1 $-(x + 4)$

.....

2 $-(2y - 3)$

.....

3 $-(-a + 5)$

.....

4 $-(-3b - 2)$

.....



2. Distributive Property

5 $3(x + 4)$

.....

6 $-2(x - 5)$

.....

7 $4(2n + 1)$

.....

8 $-5(p + 2)$

.....



Tip: A negative outside parentheses changes every sign inside.





Practice Set 3: Combining Like Terms & Mixed Review



Simplify or solve each problem.



1. Combining Like Terms

1 $6x + 2 - 4x$ _____

2 $5a + 3a - 7$ _____

3 $2m + 8 - m + 1$ _____

4 $9p - 2 + p$ _____



2. Mixed Review

5 Solve: $2x + 6 = 20$ _____

6 Simplify: $4(y + 3)$ _____

7 Simplify: $-(k - 8)$ _____

8 Combine: $3n + 2n - 4$ _____



Tip: Only combine terms with the same variable and power.





Answer Key



Check your work and correct any mistakes.



1. Page 3 Answers

1) $n = 11$

5) $x = 5$

2) $y = 17$

6) $m = 5$

3) $a = 8$

7) $q = 16$

4) $b = 45$

8) $r = 8$



2. Page 4 Answers

1) $-x - 4$

5) $3x + 12$

2) $-2y + 3$

6) $-2x + 10$

3) $a - 5$

7) $8n + 4$

4) $3b + 2$

8) $-5p - 10$



3. Page 5 Answers

1) $2x + 2$

5) $x = 7$

2) $8a - 7$

6) $4y + 12$

3) $m + 9$

7) $-k + 8$

4) $10p - 2$

8) $5n - 4$



Great job practicing!
Keep going one step at a time.

