BIG IDEAS MATH

Course 3 (Common Core)

California Edition

Foundations Review

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Quick Links

Latest version & replication files | **Textbook (Online Access)**

Basic Skills Handbook | **Skills Review Handbook**

Multi-Language Glossary | **Glossary Flashcards (PDF)**

Dedication. For Lizbeth. You are smart, brilliant, and capable of anything you set your mind to. Please remember to take breaks, drink water, and get some fresh air, eat good yums, mimis, and take your time.

Contents

Chapter 0

Absolute Foundations

0.1 Integers & Signs

0.2 Order of Operations

0.3 Distributive Property

Back to Contents — Solutions

Distributive Property

Chapter 0 — Absolute Foundations

*Directions: Show all work. Distribute to **every** term inside parentheses.*

Name: _____ **Date:** _____

Key Idea — Distributive Property

Distribute (multiply) to every term inside the parentheses.

Form: $a(b+c) = ab + ac$ and $a(b-c) = ab - ac$.

Helpful memory: *Whatever is outside the parentheses gets multiplied by* each *term inside.*

Common Mistakes to Avoid

- **Forgetting a term:** $3(x+5)$ must become $3x+15$ (not just $3x+5$).
- **Sign mistakes:** $-2(x-4) = -2x+8$.
- **Parentheses matter:** $-(x-7) = -x+7$.
- **Combining unlike terms too early:** Distribute first, then simplify.

Worked Examples (Follow the Steps)

Example 1. Expand: $4(\,x+3\,)$

$$4(x+3) = 4 \cdot x + 4 \cdot 3 = 4x+12.$$

Example 2. Expand: $-3(\,2x-5\,)$

$$-3(2x-5) = (-3)\cdot 2x + (-3)\cdot(-5) = -6x+15.$$

Example 3. Expand and simplify: $2(\,x+4\,)+3(\,x-1\,)$

$$2(x+4)+3(x-1) = (2x+8)+(3x-3) = 5x+5.$$

Example 4. Factor using the distributive property (reverse direction): $6x+18$

$$6x+18 = 6(x+3).$$

Your turn (mini-check). Expand: $-(x+9)$ $\Rightarrow$ _____

Practice A — Distribute (Warm-Up)

Expand. (Distribute to *every* term.)

1. $3(x+7)$

2. $5(x-2)$

3. $-4(x+6)$

4. $2(3x+1)$

5. $-7(2x-5)$

6. $\frac{1}{2}(8x-10)$

Practice B — Distribute with Negatives and Parentheses

Expand and simplify.

1. $-(x-8)$

2. $-(2x+3)$

3. $-2(x-9)$

4. $-3(4x+2)$

5. $2-(x-5)$

6. $7-(2x+1)$

Practice C — Combine Like Terms After Distributing

Expand, then simplify completely.

1. $2(x+5)+x$

2. $3(x-4)+2x$

3. $4(x+1)-2(x-3)$

4. $-3(x-2)+5(x+1)$

5. $2(2x-1)+3(x+4)$

6. $5(x-3)-2(3x-7)$

Practice D — Factor (Distribute Backwards)

Factor out the greatest common factor (GCF).

1. $8x+24$

2. $15x-10$

3. $12x+18$

4. $9x-27$

5. $14x+21$

6. $6x - 42$

Practice E — Spot the Distributive Property

For each, circle the part where the distributive property is used, then write the simplified result.

1. $3(x + 2) + 3(x - 5)$

2. $10(\,0.3x + 0.7\,)$

3. $2(5 + x)$

4. $-(x - 4) + 2(x - 4)$

Challenge (Optional)

These are a bit harder — try your best.

1. Find x if $3(x - 2) = 2x + 7$.

2. Simplify: $2\big(3x - (x - 4)\big)$.

0.4 Mixed Foundations Review

Chapter 1

Equations

1.1 Solving Simple Equations

1.2 Solving Multi-Step Equations

1.3 Solving Equations with Variables on Both Sides

1.4 Rewriting Equations and Formulas

Chapter 2

Transformations

2.1 Congruent Figures

2.2 Translations

2.3 Reflections

2.4 Rotations

2.5 Similar Figures

2.6 Perimeters and Areas of Similar Figures

2.7 Dilations

Chapter 3

Angles and Triangles

3.1 Parallel Lines and Transversals

3.2 Angles of Triangles

3.3 Angles of Polygons

3.4 Using Similar Triangles

3.5 Chapter 3 Review

Chapter 4

Graphing and Writing Linear Equations

4.1 Graphing Linear Equations

4.2 Slope of a Line

4.3 Graphing Proportional Relationships

4.4 Graphing Linear Equations in Slope-Intercept Form

4.5 Graphing Linear Equations in Standard Form

4.6 Writing Equations in Slope-Intercept Form

4.7 Writing Equations in Point-Slope Form

4.8 Chapter 4 Review

Chapter 5

Systems of Linear Equations

5.1 Solving Systems of Linear Equations by Graphing

5.2 Section 5.2

5.3 Section 5.3

5.4 Section 5.4

5.5 Chapter 5 Review

Chapter 6

Functions

6.1 Section 6.1

6.2 Section 6.2

6.3 Section 6.3

6.4 Section 6.4

6.5 Section 6.5

6.6 Chapter 6 Review

Chapter 7

Real Numbers and the Pythagorean Theorem

7.1 Section 7.1

7.2 Section 7.2

7.3 Section 7.3

7.4 Section 7.4

7.5 Section 7.5

7.6 Chapter 7 Review

Chapter 8

Volume and Similar Solids

8.1 Section 8.1

8.2 Section 8.2

8.3 Section 8.3

8.4 Section 8.4

8.5 Chapter 8 Review

Chapter 9

Data Analysis and Displays

9.1 Section 9.1

9.2 Section 9.2

9.3 Section 9.3

9.4 Section 9.4

9.5 Chapter 9 Review

Chapter 10

Exponents and Scientific Notation

10.1 Section 10.1

10.2 Section 10.2

10.3 Section 10.3

10.4 Section 10.4

10.5 Section 10.5

10.6 Section 10.6

10.7 Section 10.7

10.8 Chapter 10 Review

Appendix A

Solutions

A.1 Chapter 0 — Absolute Foundations

A.1.1 Distributive Property

Appendix B

Additional Examples