BIG IDEAS MATH

Course 3 (Common Core)

California Edition

Foundations Review

Alejandro De La Torre

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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.

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Chapter 0

Absolute Foundations

0.1 Integers & Signs

0.2 Order of Operations

0.3 Distributive Property

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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

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Appendix A

Solutions

A.1 Chapter 0 — Absolute Foundations

A.1.1 Distributive Property

Appendix B

Additional Examples