

## RELATIONAL SUBTRACTION

Error Analysis • Find the Mistake

Objective: *Inspect the reasoning, find the mistake, and repair it.*

**DO THIS** Check each solution. Find the mistake. Repair the reasoning.

**WORKED ERROR** Find the wrong step, then correct it.

**EXAMPLE** A student wrote:

$$15 - 8 = 9 \quad \times$$

8 to 10 is 2, 10 to 15 is 5 → 7

$$15 - 8 = \underline{7}$$

**INSPECT EACH SOLUTION** Tick Correct or Incorrect. If incorrect, write the fix.

1

$$7 - 3 = 4$$

Correct    Incorrect

Fix:

2

$$6 - 3 = 3$$

Correct    Incorrect

Fix:

3

$$4 - 1 = 3$$

Correct    Incorrect

Fix:

4

$$4 - 2 = 3$$

Correct    Incorrect

Fix:

5

$$5 - 3 = 3$$

Correct    Incorrect

Fix:

**REPAIR & PROVE** Rewrite each one correctly, then check it.

1

$$8 - 2 = \square$$

$$2 + \square = 8$$

2

$$5 - 4 = \square$$

$$4 + \square = 5$$

3

$$7 - 3 = \square$$

$$3 + \square = 7$$

Most mistakes came from:  miscount    wrong operation    place value

TEACHER EDITION

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1

$$7 - 3 = 4$$

Correct  Incorrect

Fix: already correct

2

$$6 - 3 = 3$$

Correct  Incorrect

Fix: already correct

3

$$4 - 1 = 3$$

Correct  Incorrect

Fix: already correct

4

$$4 - 2 = 3$$

Correct  Incorrect

Fix: 2

5

$$5 - 3 = 3$$

Correct  Incorrect

Fix: 2

**REPAIR & PROVE** Rewrite each one correctly, then check it.

1

$$8 - 2 = \underline{6}$$

$$2 + \underline{6} = 8$$

2

$$5 - 4 = \underline{1}$$

$$4 + \underline{1} = 5$$

3

$$7 - 3 = \underline{4}$$

$$3 + \underline{4} = 7$$

**TEACHER NOTES** Answer key & guidance

Answers: #1 correct; #2 correct; #3 correct; #4 incorrect -\ 2; #5 incorrect -\ 2

Common error: Off-by-one when counting up across ten

Strategy: Recompute independently, compare

Prompt: "Where exactly did the reasoning change?"

Most mistakes came from:  miscount  wrong operation  place value

