

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

$$8 - 4 = 4$$

Correct Incorrect

Fix:

2

$$4 - 1 = 2$$

Correct Incorrect

Fix:

3

$$6 - 4 = 2$$

Correct Incorrect

Fix:

4

$$4 - 3 = 1$$

Correct Incorrect

Fix:

5

$$6 - 3 = 2$$

Correct Incorrect

Fix:

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

1

$$4 - 3 = \square$$

$$3 + \square = 4$$

2

$$7 - 4 = \square$$

$$4 + \square = 7$$

3

$$8 - 1 = \square$$

$$1 + \square = 8$$

Most mistakes came from: miscount wrong operation place value



TEACHER EDITION

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1

$$8 - 4 = 4$$

Correct Incorrect

Fix: already correct

2

$$4 - 1 = 2$$

Correct Incorrect

Fix: 3

3

$$6 - 4 = 2$$

Correct Incorrect

Fix: already correct

4

$$4 - 3 = 1$$

Correct Incorrect

Fix: already correct

5

$$6 - 3 = 2$$

Correct Incorrect

Fix: 3

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

1

$$4 - 3 = \underline{1}$$

$$3 + \underline{1} = 4$$

2

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

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

3

$$8 - 1 = \underline{7}$$

$$1 + \underline{7} = 8$$

TEACHER NOTES Answer key & guidance

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

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