

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

$$15 - 11 = 6$$

Correct Incorrect

Fix:

2

$$17 - 8 = 8$$

Correct Incorrect

Fix:

3

$$17 - 15 = 8$$

Correct Incorrect

Fix:

4

$$17 - 4 = 13$$

Correct Incorrect

Fix:

5

$$13 - 3 = 9$$

Correct Incorrect

Fix:

6

$$19 - 2 = 16$$

Correct Incorrect

Fix:

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

1

$$10 - 7 = \square$$

$$7 + \square = 10$$

2

$$12 - 11 = \square$$

$$11 + \square = 12$$

3

$$17 - 7 = \square$$

$$7 + \square = 17$$

Most mistakes came from: miscount wrong operation place value



TEACHER EDITION

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

1

$$15 - 11 = 6$$

Correct Incorrect

Fix: 4

2

$$17 - 8 = 8$$

Correct Incorrect

Fix: 9

3

$$17 - 15 = 8$$

Correct Incorrect

Fix: 2

4

$$17 - 4 = 13$$

Correct Incorrect

Fix: already correct

5

$$13 - 3 = 9$$

Correct Incorrect

Fix: 10

6

$$19 - 2 = 16$$

Correct Incorrect

Fix: 17

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

1

$$10 - 7 = \underline{3}$$

$$7 + \underline{3} = 10$$

2

$$12 - 11 = \underline{1}$$

$$11 + \underline{1} = 12$$

3

$$17 - 7 = \underline{10}$$

$$7 + \underline{10} = 17$$

TEACHER NOTES Answer key & guidance

Answers: #1 incorrect \rightarrow 4; #2 incorrect \rightarrow 9; #3 incorrect \rightarrow 2;
#4 correct; #5 incorrect \rightarrow 10; #6 incorrect \rightarrow 17

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

