

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

$$17 - 6 = 12$$

Correct Incorrect

Fix:

2

$$8 - 6 = 3$$

Correct Incorrect

Fix:

3

$$20 - 17 = 3$$

Correct Incorrect

Fix:

4

$$16 - 14 = 8$$

Correct Incorrect

Fix:

5

$$13 - 10 = 3$$

Correct Incorrect

Fix:

6

$$10 - 6 = 6$$

Correct Incorrect

Fix:

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

1

$$15 - 10 = \square$$

$$10 + \square = 15$$

2

$$20 - 19 = \square$$

$$19 + \square = 20$$

3

$$18 - 15 = \square$$

$$15 + \square = 18$$

Most mistakes came from: miscount wrong operation place value



TEACHER EDITION

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EXAMPLE

A student wrote:

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

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

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

1

$$17 - 6 = 12$$

Correct Incorrect

Fix: 11

2

$$8 - 6 = 3$$

Correct Incorrect

Fix: 2

3

$$20 - 17 = 3$$

Correct Incorrect

Fix: already correct

4

$$16 - 14 = 8$$

Correct Incorrect

Fix: 2

5

$$13 - 10 = 3$$

Correct Incorrect

Fix: already correct

6

$$10 - 6 = 6$$

Correct Incorrect

Fix: 4

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

1

$$15 - 10 = \underline{5}$$

$$10 + \underline{5} = 15$$

2

$$20 - 19 = \underline{1}$$

$$19 + \underline{1} = 20$$

3

$$18 - 15 = \underline{3}$$

$$15 + \underline{3} = 18$$

TEACHER NOTES Answer key & guidance

Answers: #1 incorrect \rightarrow 11; #2 incorrect \rightarrow 2; #3 correct; #4 incorrect \rightarrow 2; #5 correct; #6 incorrect \rightarrow 4

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

