

Name: _____

PATTERNS & LOGIC

Reasoning Lab • Rules, Machines, and Patterns

Objective: *Find the rule, continue the pattern, and run the subtraction machine.*

DO THIS Find the rule, continue each pattern, and run the subtraction machine.

FIND THE RULE A pattern changes by the same amount each step.

EXAMPLE What is the rule?

91, 81, 71, 61, 51

Rule: subtract 10 each time.

CONTINUE THE PATTERN Write the next two numbers and the rule.

1

98, 96, 94, ,

Rule: ____

2

100, 98, 96, ,

Rule: ____

3

97, 94, 91, ,

Rule: ____

SUBTRACTION MACHINE Subtract 5 from each IN. Fill the OUT column.

IN	OUT (-5)
43	
49	
70	
99	

Every number that goes IN comes OUT 5 smaller. The rule is the same every time.

ODD ONE OUT Circle the number that does not fit the rule (subtract 2).

10, 8, 6, 5, 4, 2 — it breaks the pattern.

The rule was: ☐ subtract the same amount ☐ different each time

TEACHER EDITION

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Objective: *Find the rule, continue the pattern, and run the subtraction machine.*

DO THIS Find the rule, continue each pattern, and run the subtraction machine.

FIND THE RULE A pattern changes by the same amount each step.

EXAMPLE What is the rule?

91, 81, 71, 61, 51

Rule: subtract 10 each time.

CONTINUE THE PATTERN Write the next two numbers and the rule.

1

98, 96, 94, 92, 90

Rule: subtract 2

2

100, 98, 96, 94, 92

Rule: subtract 2

3

97, 94, 91, 88, 85

Rule: subtract 3

SUBTRACTION MACHINE Subtract 5 from each IN. Fill the OUT column.

IN	OUT (-5)
43	38
49	44
70	65
99	94

Every number that goes IN comes OUT 5 smaller. The rule is the same every time.

ODD ONE OUT Circle the number that does not fit the rule (subtract 2).

10, 8, 6, 5, 4, 2 — it breaks the pattern.

TEACHER NOTES Answer key & guidance

Answers: constant-difference patterns
Common error: Assuming the rule changes between steps

Strategy: Find the constant difference between terms
Prompt: "How much smaller is each number than the one before?"

The rule was: ☐ subtract the same amount ☐ different each time