

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?

18, 16, 14, 12, 10

Rule: subtract 2 each time.

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

1

20, 18, 16, ,

Rule: ____

2

20, 17, 14, ,

Rule: ____

3

20, 18, 16, ,

Rule: ____

SUBTRACTION MACHINE Subtract 2 from each IN. Fill the OUT column.

IN	OUT (-2)
4	
7	
15	
18	

Every number that goes IN comes OUT 2 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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EXAMPLE What is the rule?

18, 16, 14, 12, 10

Rule: subtract 2 each time.

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

1

20, 18, 16, 14, 12

Rule: subtract 2

2

20, 17, 14, 11, 8

Rule: subtract 3

3

20, 18, 16, 14, 12

Rule: subtract 2

SUBTRACTION MACHINE Subtract 2 from each IN. Fill the OUT column.

IN	OUT (-2)
4	2
7	5
15	13
18	16

Every number that goes IN comes OUT 2 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

