

Homework/Extension

Step 2: Find a Rule – Two Step

National Curriculum Objectives:

Mathematics Year 6: (6A1) [Express missing number problems algebraically](#)

Mathematics Year 6: (6A2) [Use simple formulae](#)

Differentiation:

Questions 1, 4 and 7 (Varied Fluency)

Developing Find the missing input and output the two-step function machines. Explain whether a statement is true or false. Use of whole numbers.

Expected Find the missing input and output the two-step function machines. Use of all four operations and where an input or output may be a decimal number, or a negative number.

Greater Depth Find the missing input and output the two-step function machines. Use of all four operations where an input or output may be a decimal number, or a negative number. Functions may also include decimal numbers or fractions.

Questions 2, 5 and 8 (Varied Fluency)

Developing Match the inputs and outputs to the correct two-step function. Use of whole numbers.

Expected Match the inputs and outputs to the correct two-step function. Use of all four operations and where an input or output may be a decimal number, or a negative number.

Greater Depth Match the inputs, outputs and two functions. Use of all four operations where an input or output may be a decimal number, or a negative number. Functions may also include decimal numbers or fractions.

Questions 3, 6 and 9 (Reasoning and Problem Solving)

Developing Complete the two-step function machine in order to find the possible output. Use of whole numbers.

Expected Complete the two-step function machine in order to find the possible output. Use of all four operations and where an input or output may be a decimal number, or a negative number.

Greater Depth Complete the two-step function machine in order to find the possible output. Use of all four operations where an input or output may be a decimal number, or a negative number. Functions may also include decimal numbers or fractions.

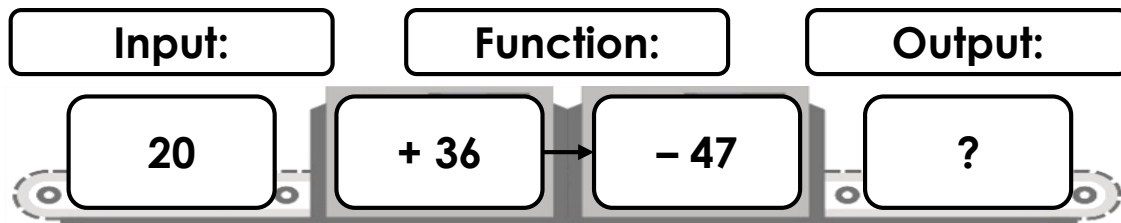
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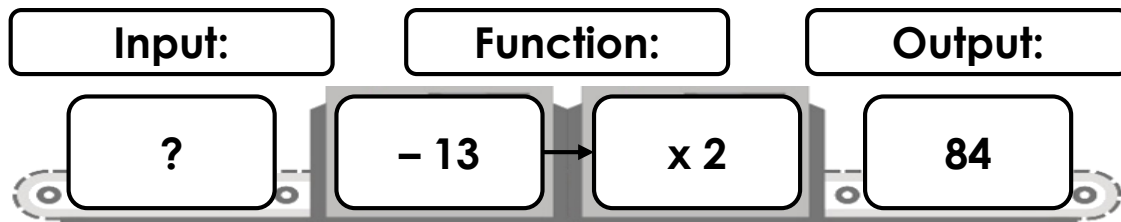
Find a Rule – Two Step

1. Find the missing input and output to the two-step function machines below.

A.



B.



VF
HW/Ext

2. Match the inputs and outputs to the correct two-step function below.

Inputs:

Function:

Outputs:

21

$\times 2 + 10$

82

36

$+ 2 - 10$

13

29

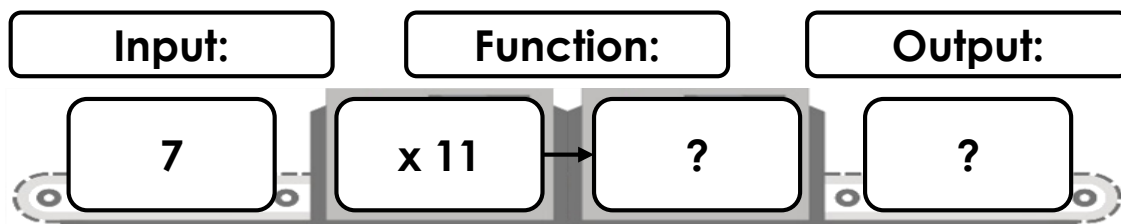
$- 5 \times 3$

72



VF
HW/Ext

3. The output of the two-step function machine below is between 50 and 100.



Complete the missing function in order to work out what the output could be.

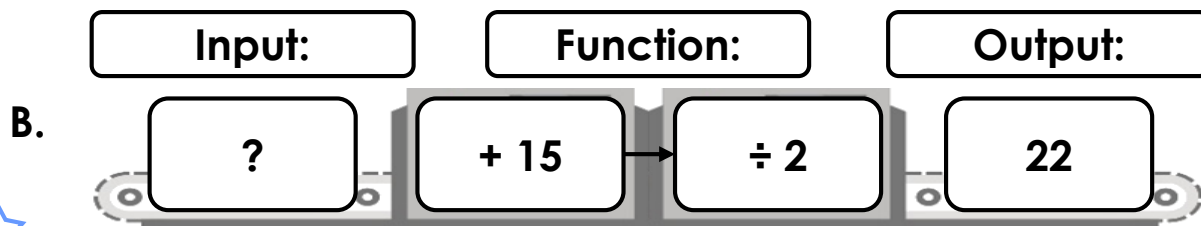
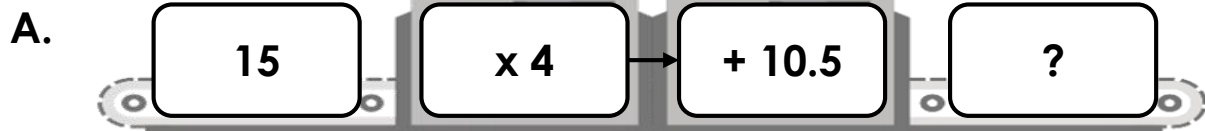
Find 3 possibilities.



RPS
HW/Ext

Find a Rule – Two Step

4. Find the missing input and output to the two-step function machines below.



VF
HW/Ext

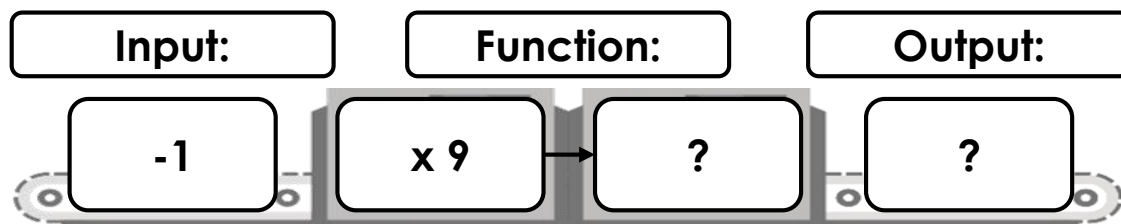
5. Match the inputs and outputs to the correct two-step function below.

Inputs:	Function:	Outputs:
17.5	$\times 2 + 10$	32
11	$\div 2 - 9$	15
8	$- 10 \times 2$	-5



VF
HW/Ext

6. The output of the two-step function machine below is between 0 and 50.



Complete the missing function in order to work out what the output could be.

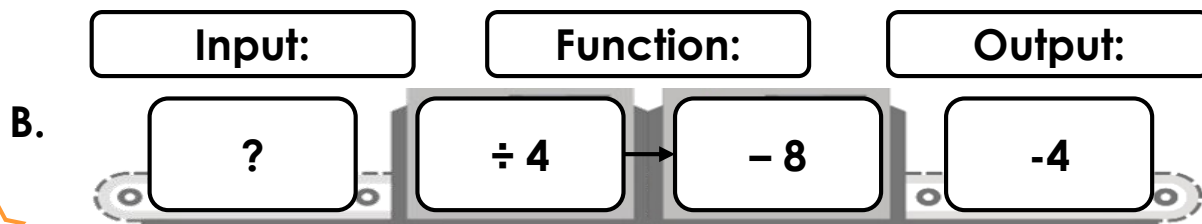
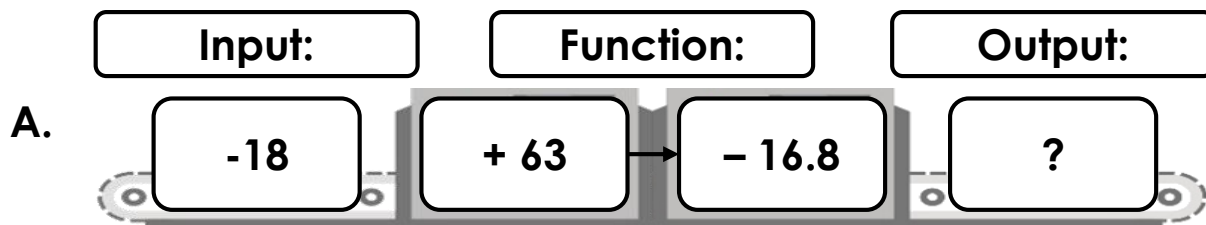
Find 3 possibilities.



RPS
HW/Ext

Find a Rule – Two Step

7. Find the missing input and output to the two-step function machines below.



VF
HW/Ext

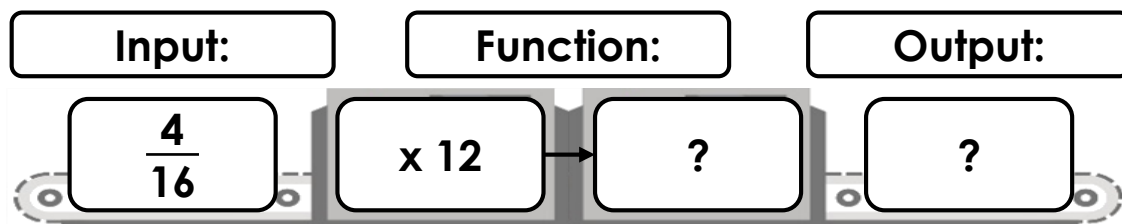
8. Match the inputs and outputs to the correct two-step function below, by combining two functions together.

Inputs:	Function 1:	Function 2:	Outputs:
17.5	$\times 2$	$\times 2$	26
24	$\div 3$	$+ 17$	84
27	$+ 18$	$- 18$	17



VF
HW/Ext

9. The output of the two-step function machine below is less than 10.



Complete the missing function in order to work out what the output could be.

Find 3 possibilities.



RPS
HW/Ext

Homework/Extension

Find a Rule – Two Step

Developing

1. A. 9; B. 55
2. $21 + 2 - 10 = 13$; $36 \times 2 + 10 = 82$; $29 - 5 \times 3 = 72$
3. Various answers, for example:
 $+ 20, 97$; $- 20, 57$; $+ 19, 96$

Expected

4. A. 70.5; B. 29
5. $17.5 - 10 \times 2 = 15$; $11 \times 2 + 10 = 32$; $8 \div 2 - 9 = -5$
6. Various answers, for example:
 $+ 50, 41$; $+ 49, 40$; $+ 48, 39$

Greater Depth

7. A. 28.2; B. 16
8. $17.5 \times 2 - 18 = 17$; $24 + 18 \times 2 = 84$; $27 \div 3 + 17 = 26$
9. Various answers, for example:
 $\times 3, 9$; $\times 2, 6$; $+ 3.5, 6.5$