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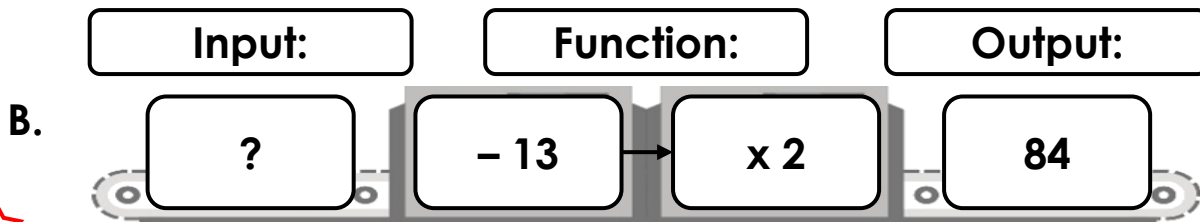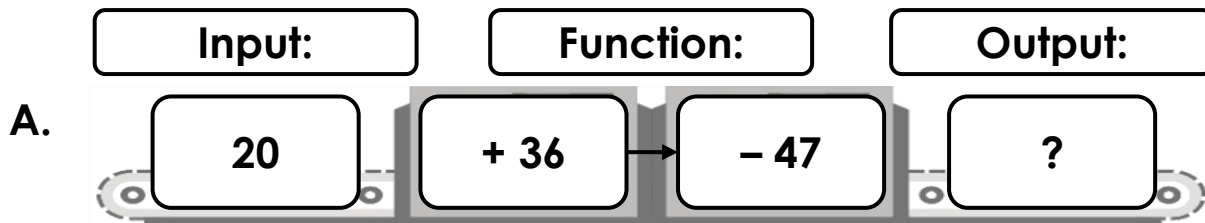**Greater Depth** Complete the two-step function machine in order to find the possible output. Use of all four operations where an input or output may be a decimal number, or a negative number. Functions may also include decimal numbers or fractions.

More Year 6 Algebra resources.

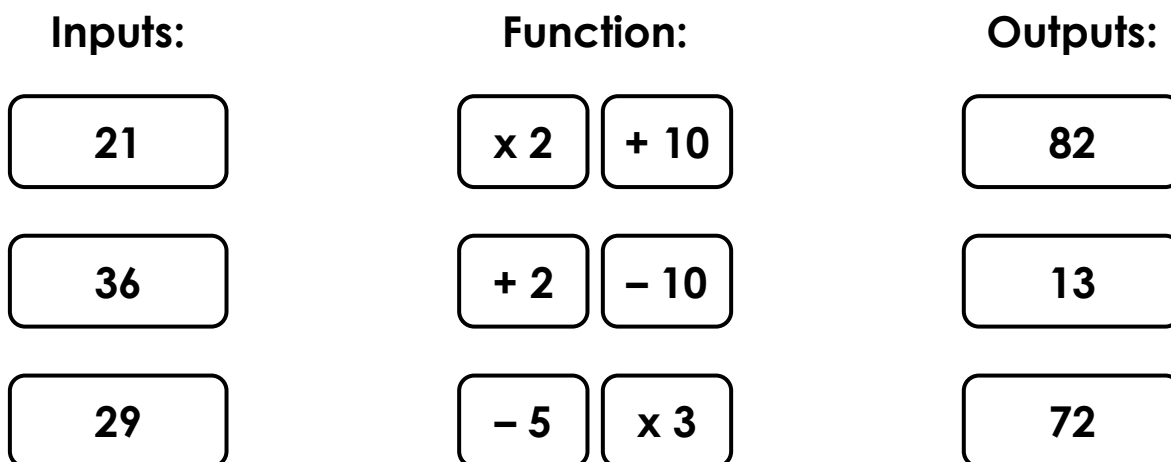## Did you like this resource? Don't forget to review it on our website.

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Find a Rule – Two Step

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

Input:	Function:		Output:

A. 20 → + 36 → − 47 → ?

Input:	Function:		Output:

B. ? → − 13 → x 2 → 84

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

Inputs:	Function:	Outputs:
21	x 2 + 10	82
36	+ 2 − 10	13
29	− 5 x 3	72

VF
HW/Ext

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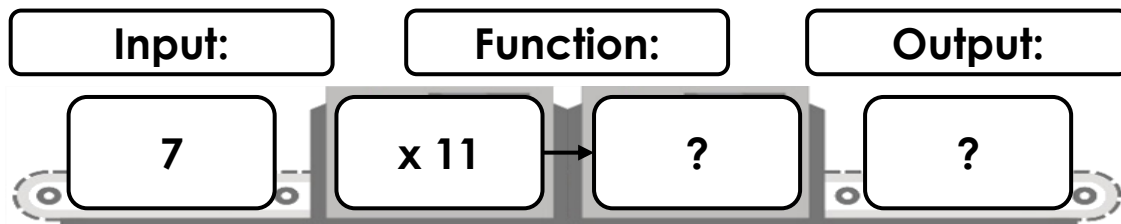
Input:	Function:	Output:

7 → x 11 → ? → ?

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

Find 3 possibilities.

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Homework/Extension – Find a Rule – Two Step – Year 6 Developing
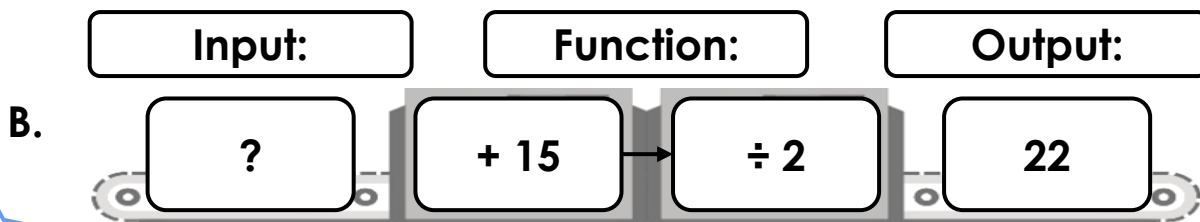
Find a Rule – Two Step

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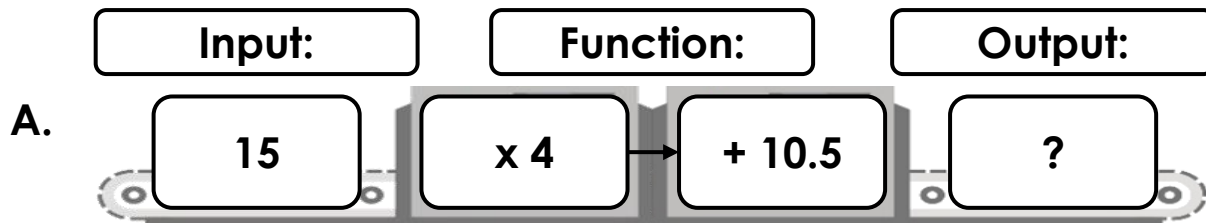
A.

Input:	Function:	Output:
15	x 4 → + 10.5	?

B.

Input:	Function:	Output:
?	+ 15 → ÷ 2	22

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

Inputs:	Function:	Outputs:
17.5	x 2 · + 10	32
11	÷ 2 · − 9	15
8	− 10 · x 2	-5
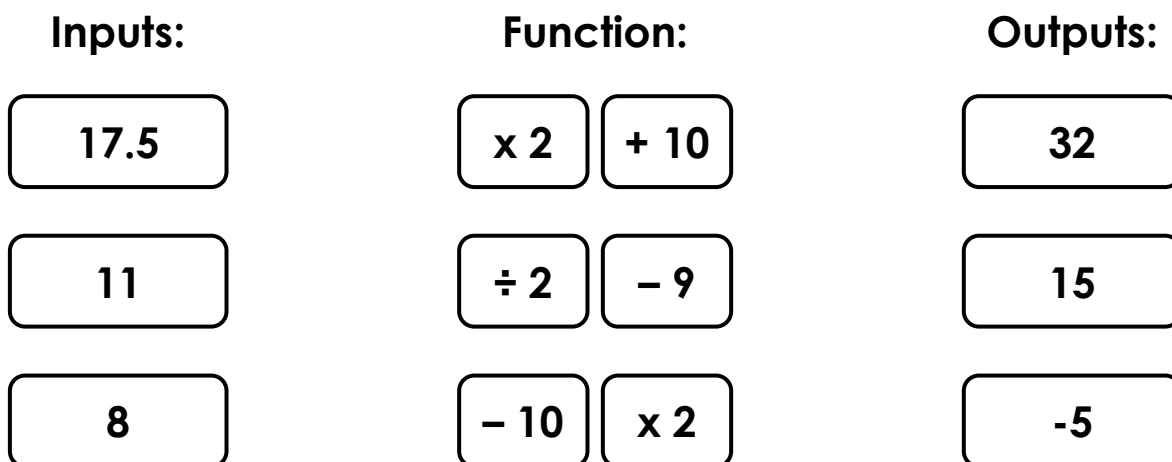
6. The output of the two-step function machine below is between 0 and 50.
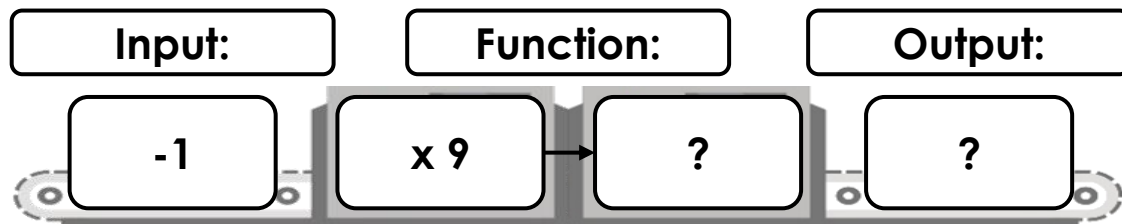
Input:	Function:	Output:
-1	x 9 → ?	?

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

Find 3 possibilities.

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Homework/Extension – Find a Rule – Two Step – Year 6 Expected
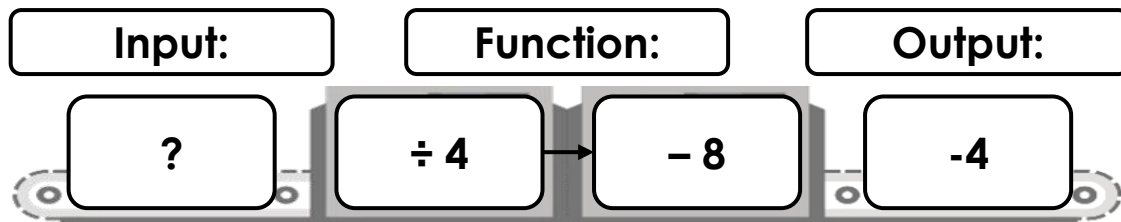
Find a Rule – Two Step

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

A.

Input:	Function:	Output:
-18	+ 63 → − 16.8	?

B.

Input:	Function:	Output:
?	÷ 4 → − 8	-4
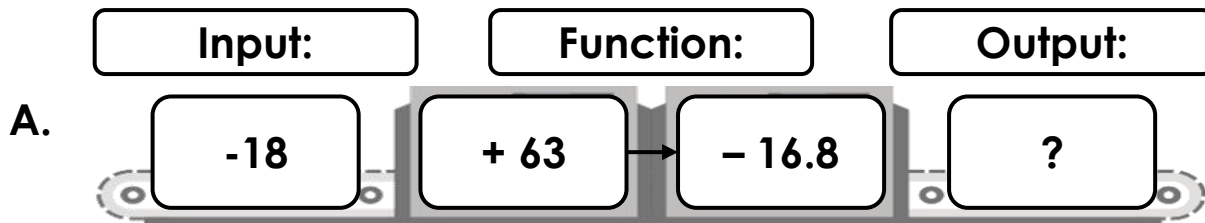
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8. Match the inputs and outputs to the correct two-step function below.

Inputs:	Function:	Outputs:
17.5	x 2 x 2	26
24	÷ 3 + 17	84
27	+ 18 − 18	17

VF
HW/Ext

9. The output of the two-step function machine below is less than 10.
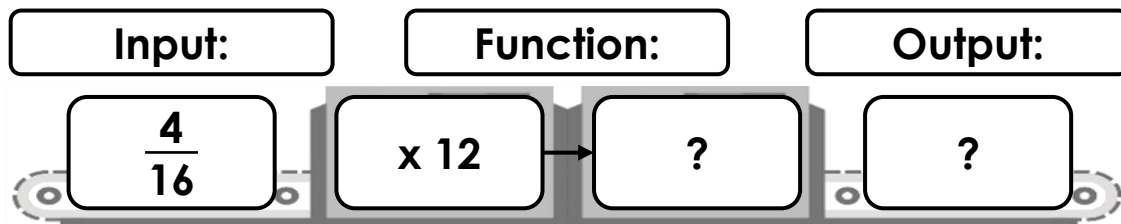
Input:	Function:	Output:
$\frac{4}{16}$	x 12 → ?	?

Complete the missing function in order to work out what the output could be.
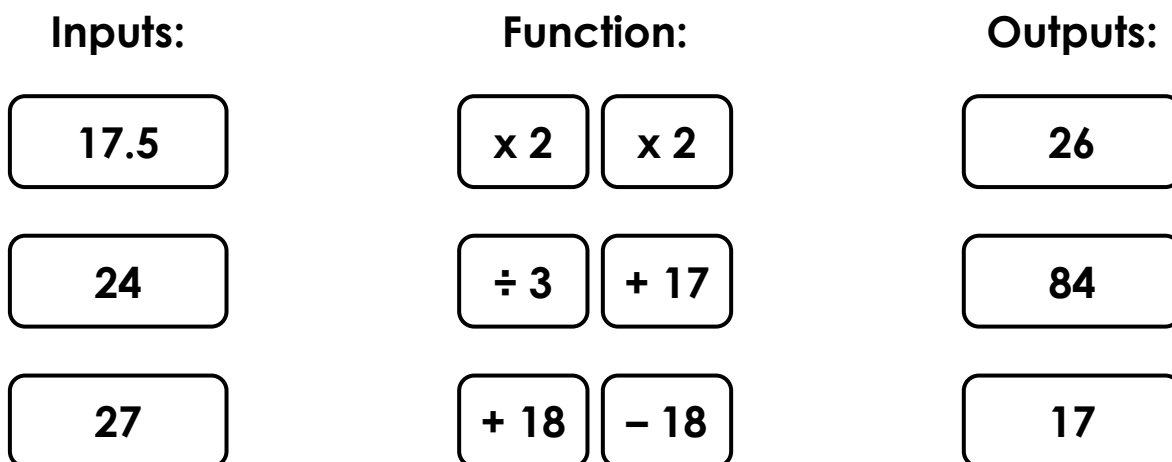
Find 3 possibilities.

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Homework/Extension
Find a Rule – Two Step

Developing
1. A. 9; B. 55
2. 21 + 2 and then – 10 = 13; 36 x 2 and then + 10 = 82; 29 – 5 and then x 3 = 72
3. Various answers, for example:
+ 20, 97; – 20, 57; + 19, 96

Expected
4. A. 70.5; B. 29
5. 17.5 – 10 and then x 2 = 15; 11 x 2 and then + 10 = 32; 8 ÷ 2 and then – 9 = -5
6. Various answers, for example:
+ 50, 41; + 49, 40; + 48, 39

Greater Depth
7. A. 28.2; B. 16
8. 17.5 x 2 and then – 18 = 17; 24 + 18 and then x 2 = 84; 27 ÷ 3 and then + 17 = 26
9. Various answers, for example:
x 3, 9; x 2, 6; + 3.5, 6.5

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