Varied Fluency
Step 1: Find a Rule – One Step

National Curriculum Objectives:

Mathematics Year 6: (6A1) Express missing number problems algebraically
Mathematics Year 6: (6A2) Use simple formulae

Differentiation:

Developing Questions to support finding inputs, outputs and functions using one-step function machines, using whole numbers.
Expected Questions to support finding inputs, outputs and functions using one-step function machines, using all four operations where an input or output may be a decimal number or a negative number.
Greater Depth Questions to support finding inputs, outputs and functions using one-step function machines, using all four operations where an input or output may be a decimal number, a fraction or a negative number. Functions may also include decimal numbers.

More Year 6 Algebra resources.

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

Find a Rule – One Step

1a. Using the function below, match the inputs to the correct outputs.

Function: + 21

Inputs:	Outputs:
97	73
112	133
52	118

D

VF

Find a Rule – One Step

1b. Using the function below, match the inputs to the correct outputs.

Function: – 36

Inputs:	Outputs:
89	47
83	53
78	42

D

VF

2a. Circle the function being used in the function machine below.

Inputs:	Function:	Outputs:
11		24
25	?	38

– 9 + 17 + 13

D

VF

2b. Circle the function being used in the function machine below.

Inputs:	Function:	Outputs:
65		36
59	?	30

– 27 – 29 x 3

D

VF

3a. Work out the missing inputs and outputs for the function machine below.

Inputs:	Function:	Outputs:
		44
17	x 4	

D

VF

3b. Work out the missing inputs and outputs for the function machine below.

Inputs:	Function:	Outputs:
154		
	– 88	33

D

VF

4a. Tick the incorrect outputs below.

Inputs:	Function:	Outputs:
52		3
101	– 49	51
91		43

D

VF

4b. Tick the incorrect inputs below.

Inputs:	Function:	Outputs:
302		376
26	+ 73	100
156		229

D

VF

Find a Rule – One Step

5a. Using the function below, match the inputs to the correct outputs.

Function: ÷ 3

Inputs:	Outputs:
84	23
105	28
69	35

VF

Find a Rule – One Step

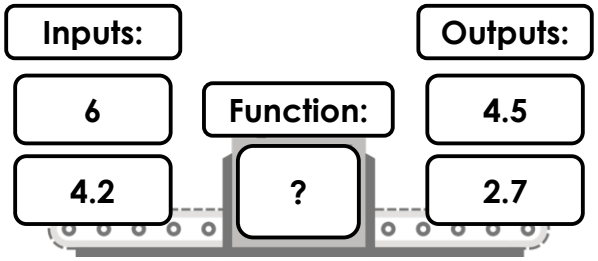
5b. Using the function below, match the inputs to the correct outputs.

Function: x 8

Inputs:	Outputs:
17.5	140
15	124
15.5	120

VF

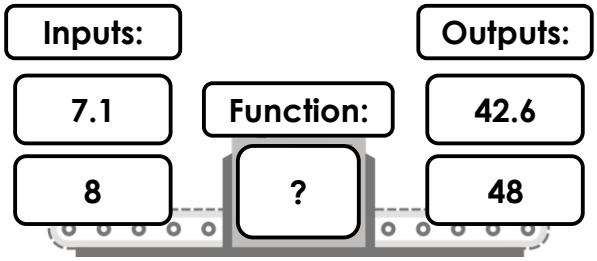
6a. Circle the function being used in the function machine below.



– 1.7 ÷ 2 – 1.5

VF

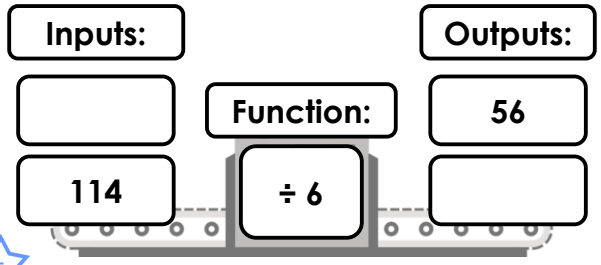
6b. Circle the function being used in the function machine below.



x 4 x 6 x 7

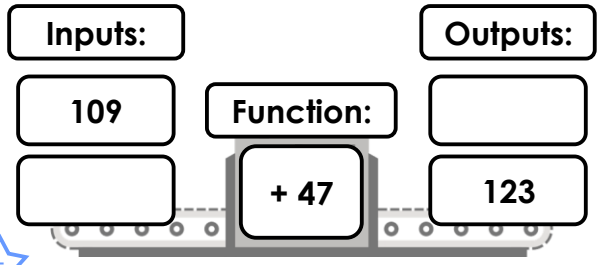
VF

7a. Work out the missing inputs and outputs for the function machine below.



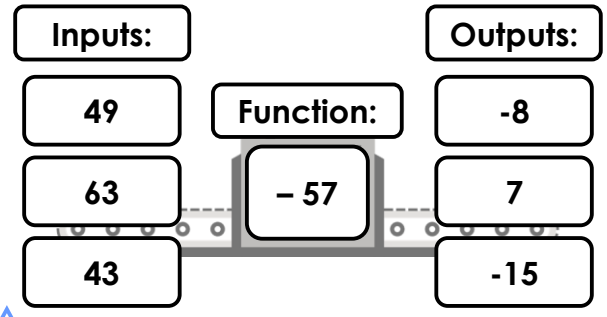
VF

7b. Work out the missing inputs and outputs for the function machine below.



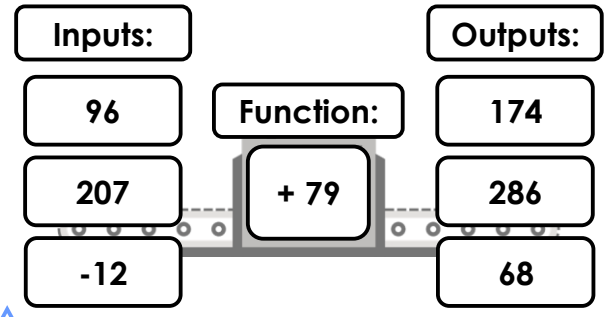
VF

8a. Tick the incorrect outputs below.



VF

8b. Tick the incorrect inputs below.



VF

Find a Rule – One Step

9a. Using the function below, match the inputs to the correct outputs.

Function: ÷ 7

Inputs:	Outputs:
98	12
168	24
84	14

GD VF

Find a Rule – One Step

9b. Using the function below, match the inputs to the correct outputs.

Function: x 9

Inputs:	Outputs:
37	333
42	423
47	378

GD VF

10a. Circle the function being used in the function machine below.

Inputs:	Function:	Outputs:
18.7	?	9.6
14.2		5.1

– 5.7 ÷ 3 – 9.1

GD VF

10b. Circle the function being used in the function machine below.

Inputs:	Function:	Outputs:
5.3	?	37.1
8.2		57.4

x 5 x 7 + 31.7

GD VF

11a. Work out the missing inputs and outputs for the function machine below.

Inputs:	Function:	Outputs:
	– 73	-13
57		

GD VF

11b. Work out the missing inputs and outputs for the function machine below.

Inputs:	Function:	Outputs:
$\frac{1}{2}$	– 0.7	
		-1.3

GD VF

12a. Tick the incorrect outputs below.

Inputs:	Function:	Outputs:
3.2	– 0.9	2.5
-6.7		-5.8
4.4		3.5

GD VF

12b. Tick the incorrect inputs below.

Inputs:	Function:	Outputs:
8.9	x 8	71.1
$\frac{3}{8}$		3.5
-12		-96

GD VF

Varied Fluency
Find a Rule – One Step

Developing
1a. 97, 118; 112, 133; 52, 73
2a. + 13
3a. 11; 68
4a. 51; 43

Expected
5a. 84, 28; 105, 35; 69, 23
6a. – 1.5
7a. 336; 19
8a. 7; -15

Greater Depth
9a. 98, 14; 168, 24; 84, 12
10a. – 9.1
11a. 60; -16
12a. 2.5; -5.8

Varied Fluency
Find a Rule – One Step

Developing
1b. 89, 53; 83, 47; 78, 42
2b. – 29
3b. 66; 121
4b. 302; 26

Expected
5b. 17.5, 140; 15, 120; 15.5, 124
6b. x 6
7b. 156; 76
8b. 96; -12

Greater Depth
9b. 37, 333; 42, 378; 47, 423
10b. x 7
11b. -0.2, -0.6
12b. 8.9, $\frac{3}{8}$