Steps to Success

Lockdown	
Date	25.1.21
Subject/s	**Maths**
Learning Objective 	To find a one-step rule

		SA 	TA 
Success Criteria 	I can identify the function using the input and output		
	I can write the functions as algebraic expressions		
	I know letters can be used to represent numbers		
Support	Independent Adult Support ( ) Group Work		

Pre-task

Complete the table for the given function machine.

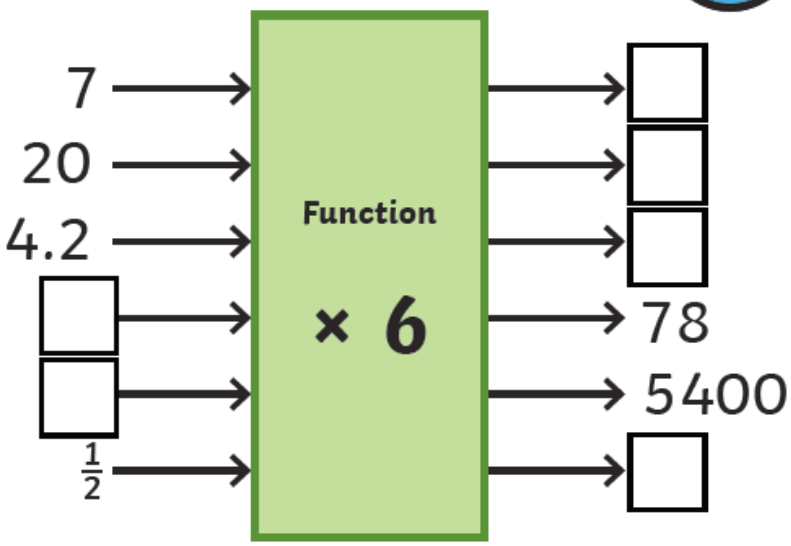
Input ⟶ + 5 ⟶ Output

Input	5	5.8	10	-3	-8				a	y
Output						9	169	0		

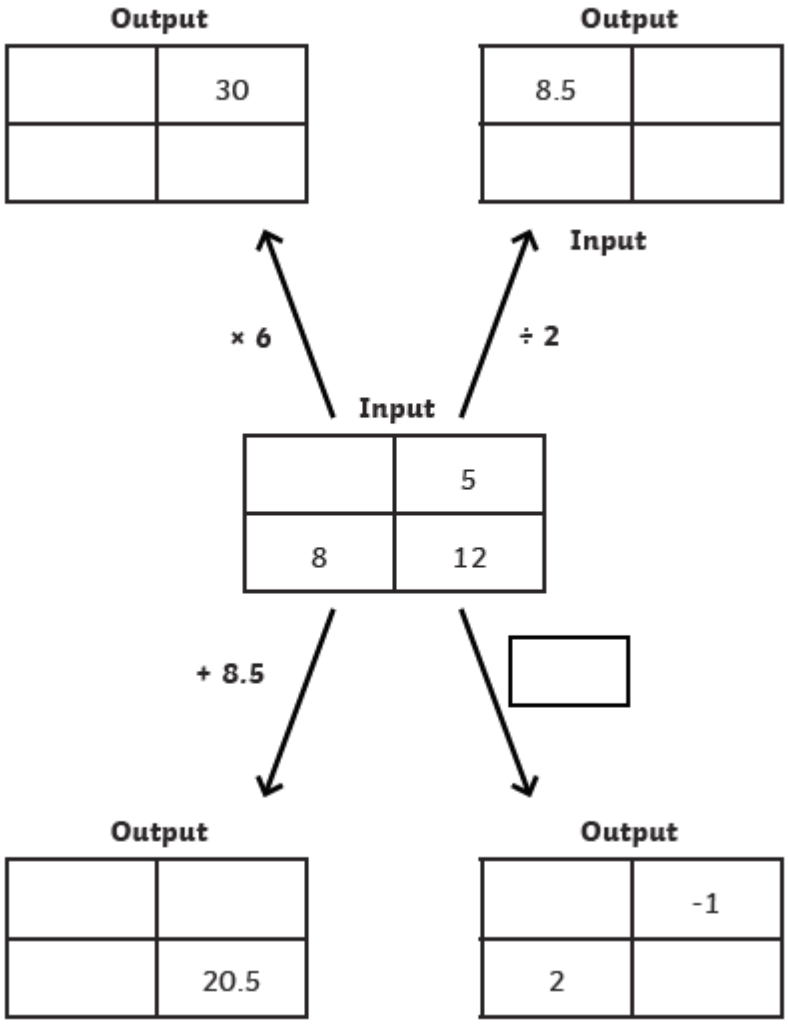
Write your function as an algebraic rule?

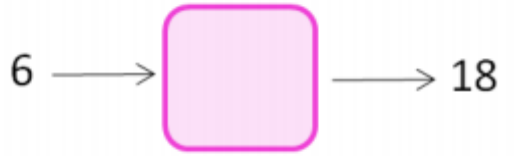
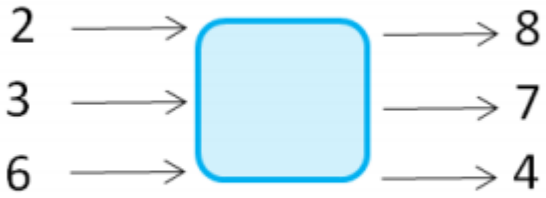
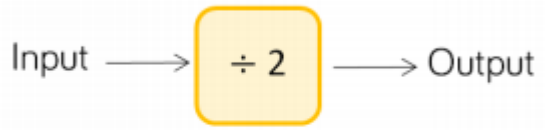
Fluency

1) This is a one-step function machine. Give the missing inputs and outputs.



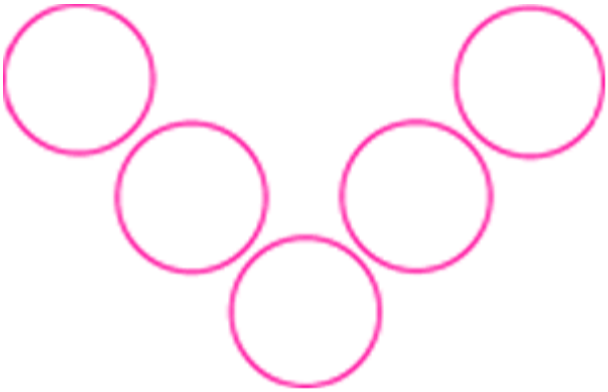
2) This one-step function machine has four different outputs. Find the missing outputs, inputs and function.



Problem Solving and Reasoning	Answers
Use it!  Meg has a one-step function machine. She puts in the number 6 and the number 18 comes out.  What could the function be? How many different answers can you find?	The function could be +12, ×6, subtract from 24, divide by 1/3
Use it!  Explain it!  Giles puts in some numbers into a function machine.  What is he output from the function when the input is 16?	The function is subtract from 10 so the output is -6
Use it!  Lucy is using the following function machine.  Lucy put a number into the machine. She puts the output back into the machine and gets out another number. The final answer is 2.5 What number did Lucy put in?	10
Lucy has another function machine. • She puts a number 8 and gets an output. • She puts the output back into the machine. • The final output is -6 What could the function be?	Subtract 7 (- 7)

Further Challenge

Place each of the numbers 1 to 5 in the V shape below so that the two arms of the V have the same total.



How many different possibilities are there?
What do you notice about all the solutions you find?

Can you explain what you see?

Can you convince someone that you have all the solutions?

What happens if we use the numbers from 2 to 6? From 12 to 16? From 37 to 41?
From 103 to 107?

What can you discover about a V that has arms of length 4 using the numbers 1–7?