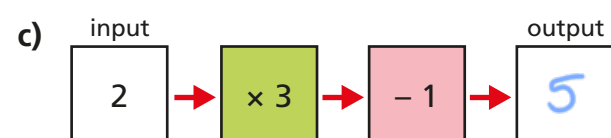
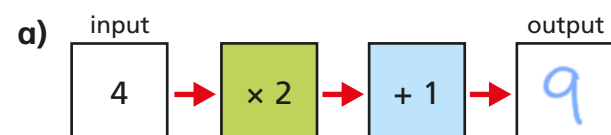


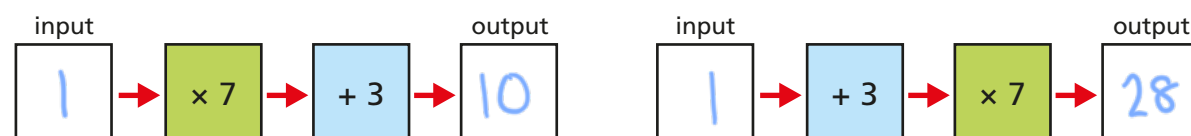
2-step function machines (number)



1 Complete the function machines.



2 Teddy says these two function machines are the same.

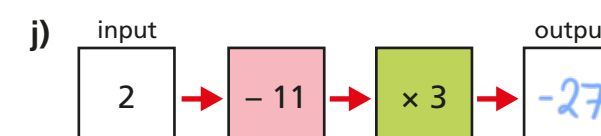
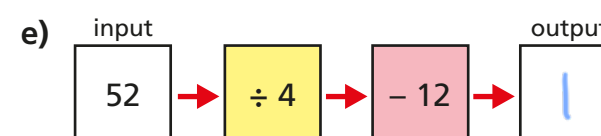
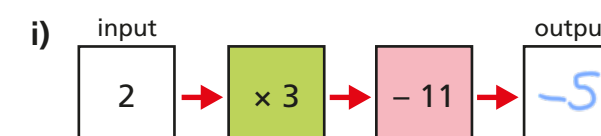
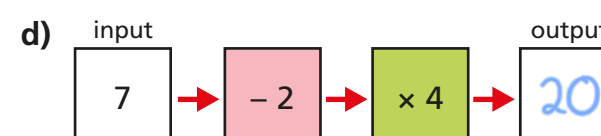
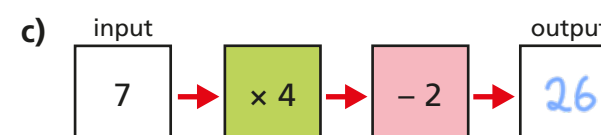
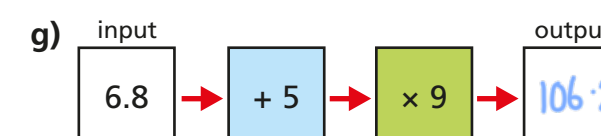
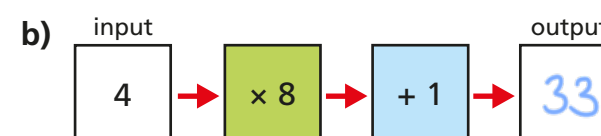
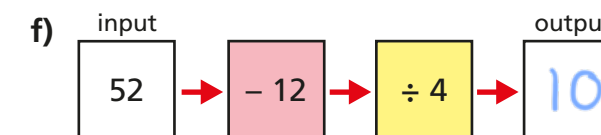
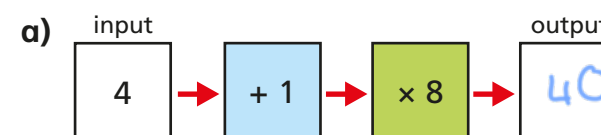


Explain why Teddy is incorrect.

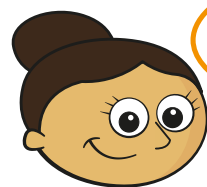
The order is different. If the input was 1, the output on the left would be 10 whereas the right would be 28

Complete the function machines to support your answer.

3 Complete these 2-step function machines.



- 4 Dora is finding the input for this 2-step function machine.



When finding the input, you need to use the inverse operations.



Here is her working out.

Check Dora's answer by inputting 1 back in to the 2-step function machine.

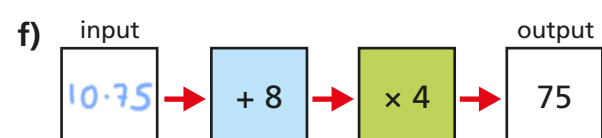
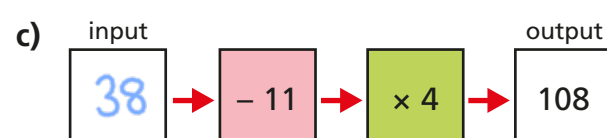
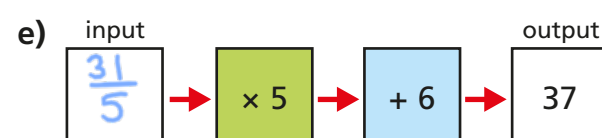
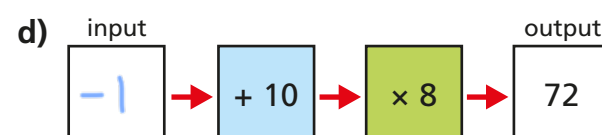
Is Dora correct? No

Explain your reasoning.

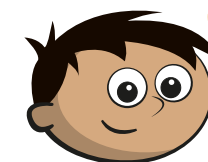
$$\begin{aligned} 36 \div 4 &= 9 \\ 9 - 8 &= 1 \\ \text{So the input is } 1 \end{aligned}$$

She didn't work backwards. She should have done $36 - 8 = 28$ and $28 \div 4 = 7$. The input is 7

- 5 Complete these 2-step function machines.



- 6 Amir is thinking of a number.



If I double my number and add on 2, the answer is 80

- a) Draw this as a 2-step function machine.

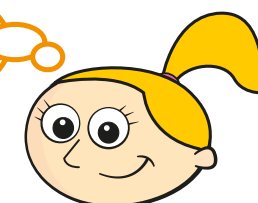
Input $\rightarrow \times 2 \rightarrow + 2 \rightarrow 80$

- b) Use inverse operations to work out Amir's number.

39

Eva is thinking of a number.

If I halve my number and subtract 7, the result is 15.9



- c) Draw this as a 2-step function machine

Input $\rightarrow \div 2 \rightarrow - 7 \rightarrow 15.9$

- d) Use inverse operations to work out the number Eva is thinking of.

45.8

- e) Make up your own "think of a number" problem for a partner.