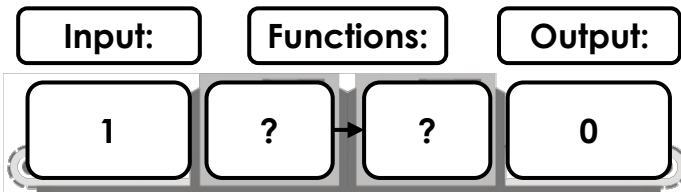


## Find a Rule – Two Step

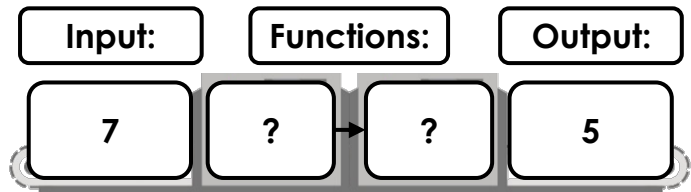
1a. Insert two functions that could be used to make the function machine correct.



PS

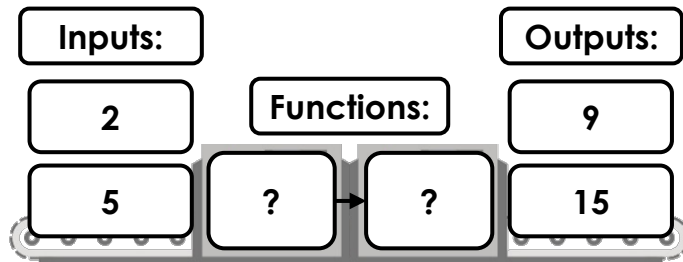
## Find a Rule – Two Step

1b. Insert two functions that could be used to make the function machine correct.



PS

2a. True or false? Explain your answer. Suggest what the functions could be.

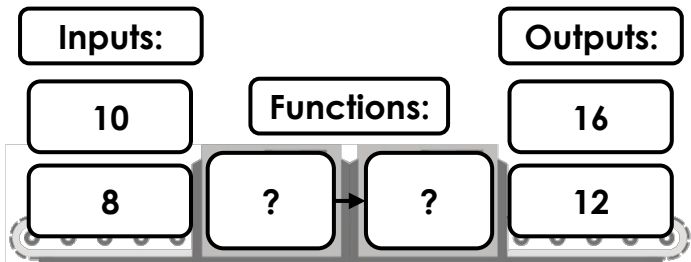


I think that the function is  $+ 16$  and then  $\div 2$  because  $2 + 16$ , then  $\div 2$  is 9.



R

2b. True or false? Explain your answer. Suggest what the functions could be.

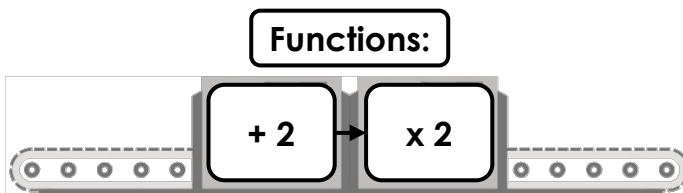


I think that the function is  $\div 2$  and then  $+ 11$  because  $10 \div 2$ , then  $+ 11$  is 16.



R

3a. Fatima is using this function machine.



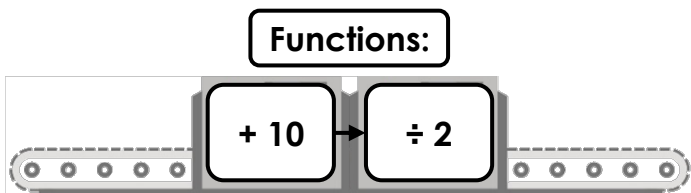
She puts an input into the function machine to generate an output. She then puts that output into the machine as an input. She now has the output of 16.

What was Fatima's original input?



PS

3b. Jude is using this function machine.



He puts an input into the function machine to generate an output. He then puts that output into the machine as an input. He now has the output of 9.

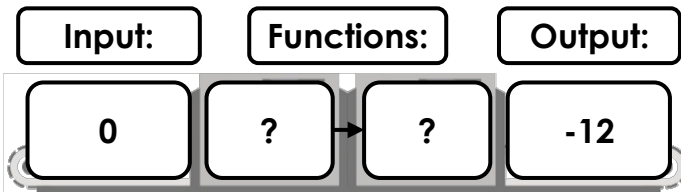
What was Jude's original input?



PS

## Find a Rule – Two Step

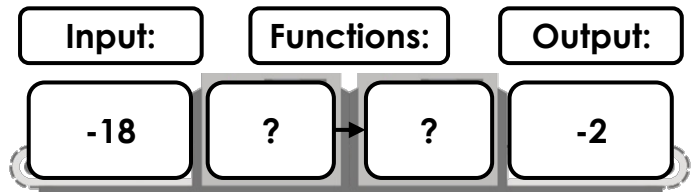
4a. Insert two functions that could be used to make the function machine correct.



PS

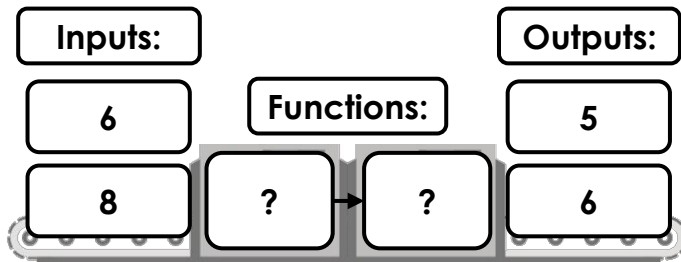
## Find a Rule – Two Step

4b. Insert two functions that could be used to make the function machine correct.



PS

5a. True or false? Explain your answer. Suggest what the functions could be.

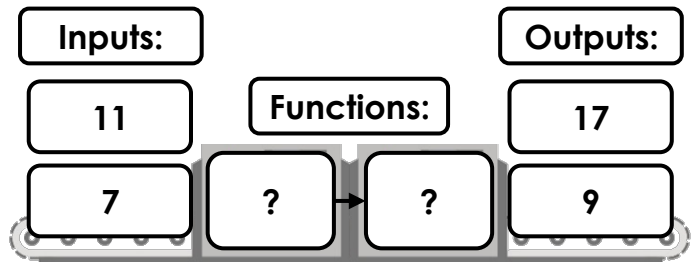


I think that the function is  $\div 3$  and then add 3 because  $6 \div 3$ , then  $+ 3$  is 5.



R

5b. True or false? Explain your answer. Suggest what the functions could be.

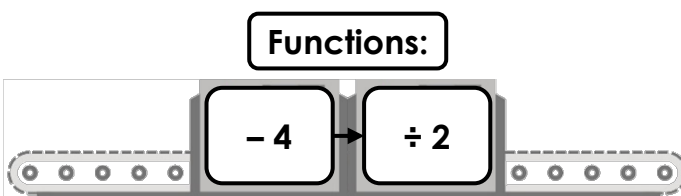


I think that the function is  $+ 11$  and then  $\div 2$  because  $7 + 11$ , then  $\div 2$  is 9.



R

6a. Eesa is using this function machine.



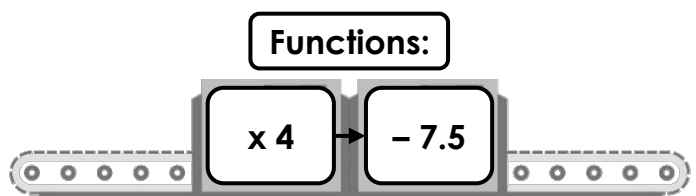
He puts an input into the function machine to generate an output. He then puts that output into the machine as an input. He now has the output of 1.5.

What was Eesa's original input?



PS

6b. Jake is using this function machine.



He puts an input into the function machine to generate an output. He then puts the output back into the machine. He now has the output of 10.5.

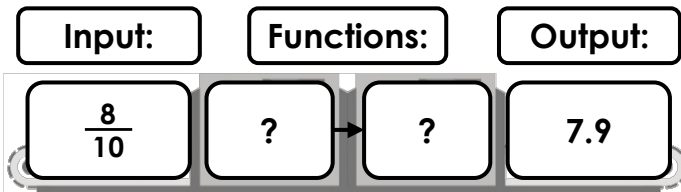
What was Jake's original input?



PS

## Find a Rule – Two Step

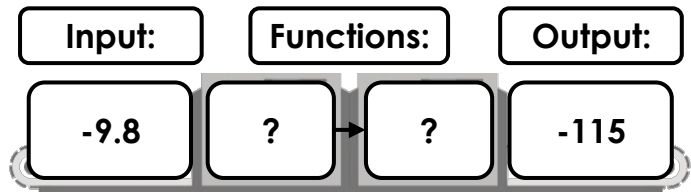
7a. Insert two functions that could be used to make the function machine correct.



PS

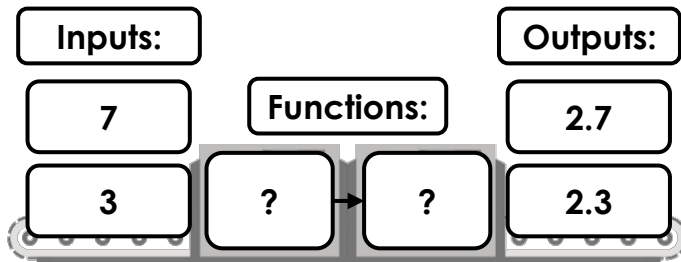
## Find a Rule – Two Step

7b. Insert two functions that could be used to make the function machine correct.



PS

8a. True or false? Explain your answer. Suggest what the functions could be.

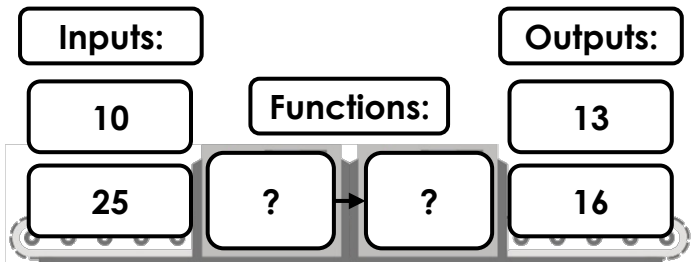


I think that the function is  $\times 2$  and then  $- 3.7$  because  $3 \times 2$ , then  $- 3.7$  is 2.3.



R

8b. True or false? Explain your answer. Suggest what the functions could be.

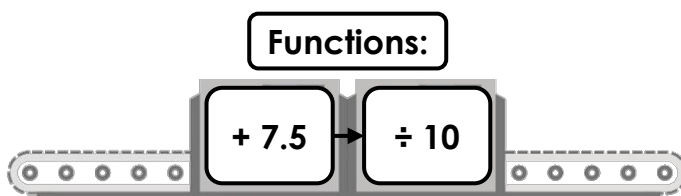


I think that the function is  $\times 2$  and then  $- 7$  because  $10 \times 2$ , then  $- 7$  is 13.



R

9a. Jaiden is using this function machine.



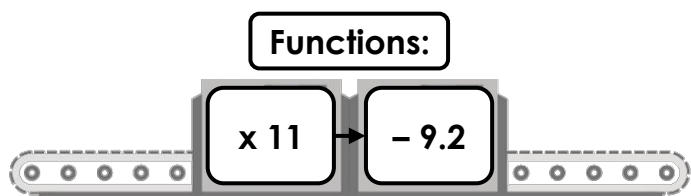
He puts an input into the function machine to generate an output. He then puts that output into the machine as an input. He now has the output of 0.875.

What was Jaiden's original input?



PS

9b. Lucy is using this function machine.



She puts an input into the function machine to generate an output. She then puts that output into the machine as an input. She now has the output of 252.6.

What was Lucy's original input?



PS

## Reasoning and Problem Solving

### Find a Rule – Two Step

#### Developing

- 1a. Various answers, for example:  $+1$ ;  $-2$   
2a. False. This doesn't work for an input of 5 to give an output of 15. The function could be  $\times 2$ ,  $+ 5$ .  
3a. 1

#### Expected

- 4a. Various answers, for example:  $-3$ ;  $\times 4$   
5a. False. This doesn't work for an input of 8 to give an output of 6. The function could be  $+ 4$ ,  $\div 2$  or  $\div 2$ ,  $+ 2$ .  
6a. 18

#### Greater Depth

- 7a. Various answers, for example:  $+ 15$ ;  $\div 2$   
8a. False. This doesn't work for an input of 7 to give an output of 2.7. The function could be  $+ 20$ ,  $\div 10$ .  
9a. 5

## Reasoning and Problem Solving

### Find a Rule – Two Step

#### Developing

- 1b. Various answers, for example:  $-6$ ;  $+4$   
2b. False. This doesn't work for an input of 8 to give an output of 12. The function could be  $-2$ ,  $\times 2$  or  $\times 2$ ,  $-4$ .  
3b. 6

#### Expected

- 4b. Various answers, for example:  $+10$ ;  $\div 4$ .  
5b. False. This doesn't work for an input of 11 to give an output of 17. The function could be  $\times 2$ ,  $-5$ .  
6b. 3

#### Greater Depth

- 7b. The missing functions are  $\times 10$ ,  $-17$ . If the input is 30, the output will be 283.  
8b. False. This doesn't work for an input of 25 to give an output of 16. The function could be  $\div 5$ ,  $+11$ .  
9b. 3