Find a Rule – Two Step

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

Input:	Functions:		Output:
$\frac{8}{10}$	?	?	7.9

GD PS

Find a Rule – Two Step

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

Input:	Functions:		Output:
-9.8	?	?	-115

GD PS

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

Inputs:		Functions:		Outputs:
7				2.7
3	?		?	2.3



Jiang: I think that the function is x 2 and then – 3.7 because 3 x 2, then – 3.7 is 2.3.

GD R

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

Inputs:		Functions:		Outputs:
10				13
25	?		?	16



Ingrid: I think that the function is x 2 and then – 7 because 10 x 2, then – 7 is 13.

GD R

9a. Jaiden is using this function machine.

Functions:	
+ 7.5	÷ 10

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?

GD PS

9b. Lucy is using this function machine.

Functions:	
x 11	– 9.2

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?

GD PS

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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 x 2, + 5.
3a. 1

Expected

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

Greater Depth

7a. Various answers, for example: + 15; ÷ 2
8a. False. This doesn't work for an input of 7 to give an output of 2.7. The function could be + 20, ÷ 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, x 2 or x 2, – 4.
3b. 6

Expected

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

Greater Depth

7b. The missing functions are x 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 ÷ 5, + 11.
9b. 3

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