

# Find functions from expressions (single)

1 Complete the function machines.

a) $\begin{array}{c} \text{input} \\ h \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ h + 5 \end{array}$	d) $\begin{array}{c} \text{input} \\ 2a \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ 2a + 7 \end{array}$
b) $\begin{array}{c} \text{input} \\ y \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ y - 2 \end{array}$	e) $\begin{array}{c} \text{input} \\ 5n \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ 5n - 5 \end{array}$
c) $\begin{array}{c} \text{input} \\ g \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ 4g \end{array}$	f) $\begin{array}{c} \text{input} \\ m \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ \frac{m}{3} \end{array}$

2 Complete the function machines.

$\begin{array}{c} \text{input} \\ y \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ 3y \end{array}$	$\begin{array}{c} \text{input} \\ y \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ y + 3 \end{array}$
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What is the same and what is different about these function machines?  
Explain your answer.

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3 Tick the correct function machine in each pair.

a) $\begin{array}{c} \text{input} \\ 2b \end{array} \rightarrow \begin{array}{c} \square \\ + 8 \end{array} \rightarrow \begin{array}{c} \text{output} \\ 10b \end{array}$	$\begin{array}{c} \text{input} \\ 2b \end{array} \rightarrow \begin{array}{c} \square \\ + 8b \end{array} \rightarrow \begin{array}{c} \text{output} \\ 10b \end{array}$
b) $\begin{array}{c} \text{input} \\ 2b \end{array} \rightarrow \begin{array}{c} \square \\ \times 5 \end{array} \rightarrow \begin{array}{c} \text{output} \\ 10b \end{array}$	$\begin{array}{c} \text{input} \\ 2b \end{array} \rightarrow \begin{array}{c} \square \\ \times 5b \end{array} \rightarrow \begin{array}{c} \text{output} \\ 10b \end{array}$

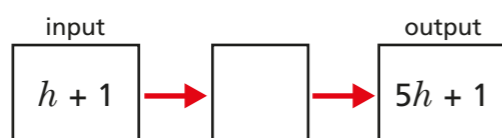
What mistakes have been made in the incorrect function machines?  
Talk about it with a partner.

4 Complete the function machines.

a) $\begin{array}{c} \text{input} \\ h \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ h + g \end{array}$	e) $\begin{array}{c} \text{input} \\ 2m \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ 2mr \end{array}$
b) $\begin{array}{c} \text{input} \\ k \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ kf \end{array}$	f) $\begin{array}{c} \text{input} \\ 3a \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ 6ab \end{array}$
c) $\begin{array}{c} \text{input} \\ y \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ y^2 \end{array}$	g) $\begin{array}{c} \text{input} \\ r^2 \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ r \end{array}$
d) $\begin{array}{c} \text{input} \\ 5p \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ p \end{array}$	h) $\begin{array}{c} \text{input} \\ b - 2 \end{array} \rightarrow \square \rightarrow \begin{array}{c} \text{output} \\ b - 7 \end{array}$

Do any of the machines have more than one possible answer?  
Talk about it with a partner.

5 Mo and Ron are finding the function for this function machine.



Who do you agree with? \_\_\_\_\_

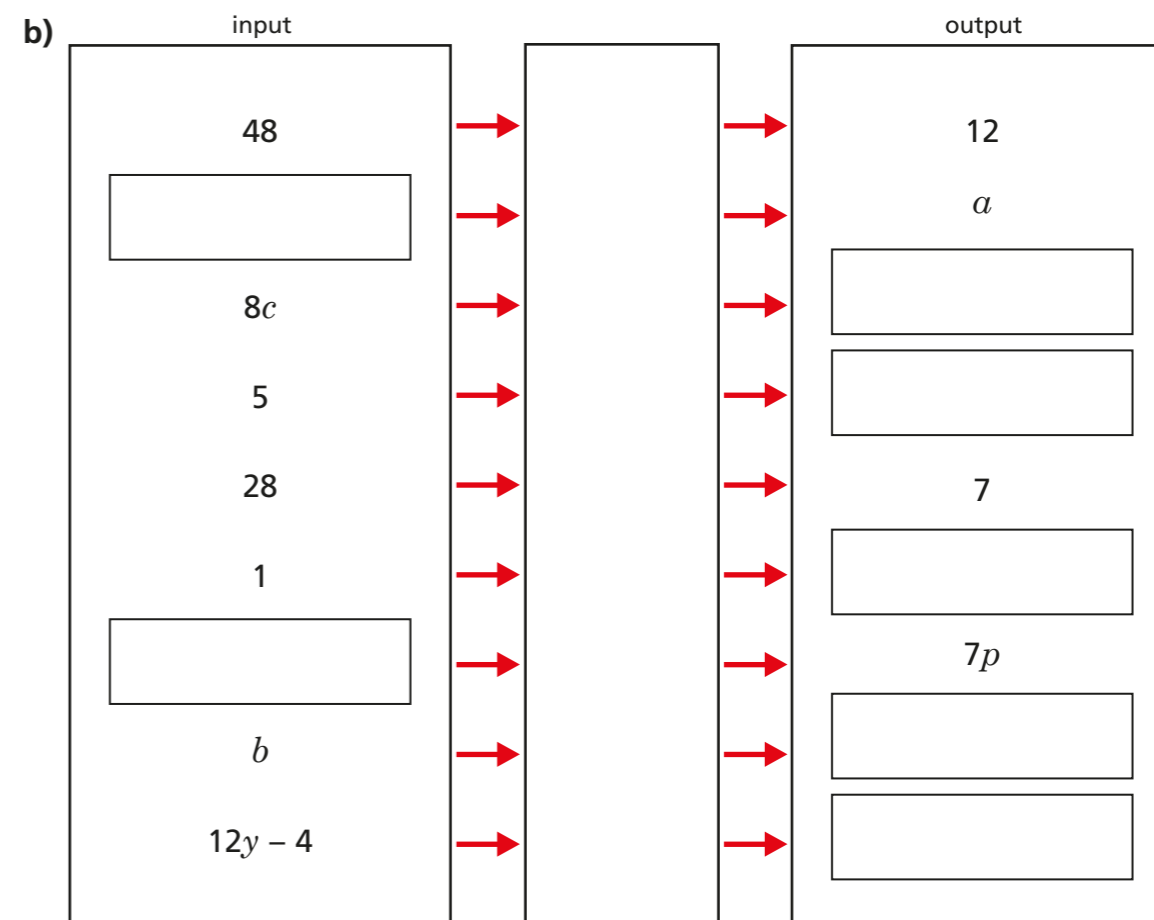
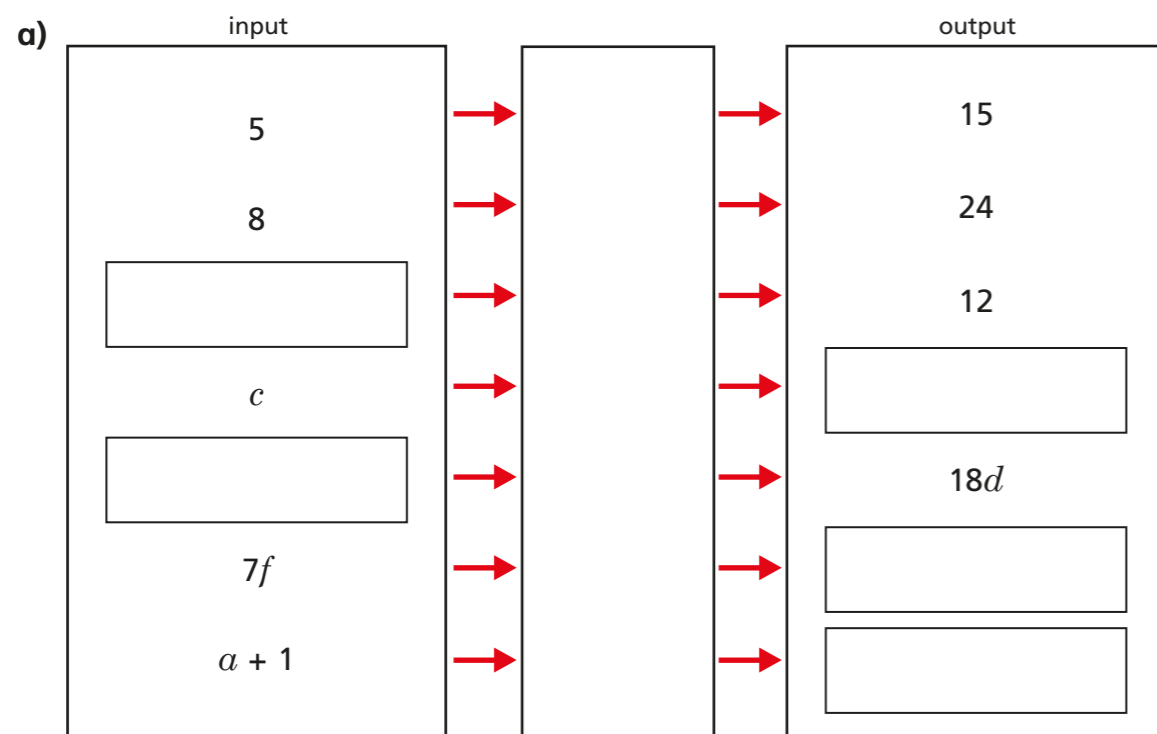
Explain your answer.

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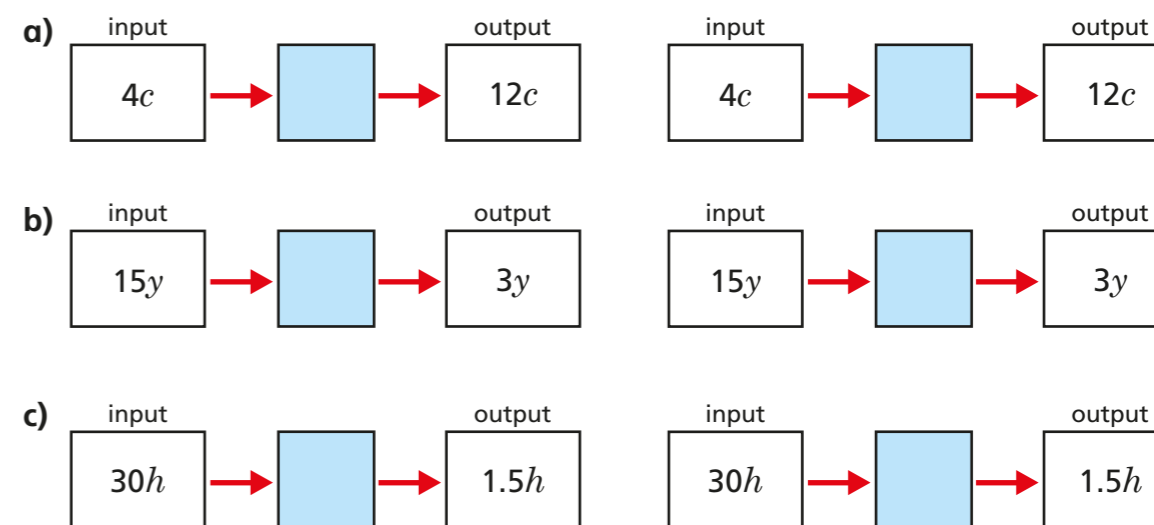


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6 Complete the function machines.



7 Complete each function machine in two different ways.



Can you find any other ways to complete the function machines?