

Single function machines (algebra)

1 Complete the function machines.

a) input g → $\times 4$ → output $4g$

d) input c → $+ 4$ → output $c+4$

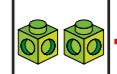
b) input g → $+ 4$ → output $g+4$

e) input $3n$ → $\times 4$ → output $12n$

c) input c → $\times 4$ → output $4c$

f) input $3n$ → $+ 4$ → output $3n+4$

2 Complete the function machines.

a) input  → $\div 2$ → output 

d) input $4a$ → $\div 2$ → output $2a$

b) input  → $\div 2$ → output 

e) input $100c$ → $\div 2$ → output $50c$

c) input $2a$ → $\div 2$ → output a

f) input d → $\div 2$ → output $\frac{d}{2}$

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The outputs for these function machines are incorrect.
Explain the mistakes and find the correct outputs.

a) input $2b$ → $\times 3$ → output $5b$

c) input $3a$ → $+ 4$ → output $7a$

Done $2+3$ not 2×3
Should be $6b$

$3a$ and 4 are not
like terms. Should be $3a+4$

b) input $5y$ → $- 5$ → output y

d) input $4a + 2$ → $\div 2$ → output $2a + 2$

Taken 5 off $5y$
Should be $5y - 5$

Not divided the 2
Should be $2a+1$

4

Complete the function machines.

a) input f → $- 7$ → output $f - 7$

b) input $4h$ → $- 4$ → output $4h - 4$

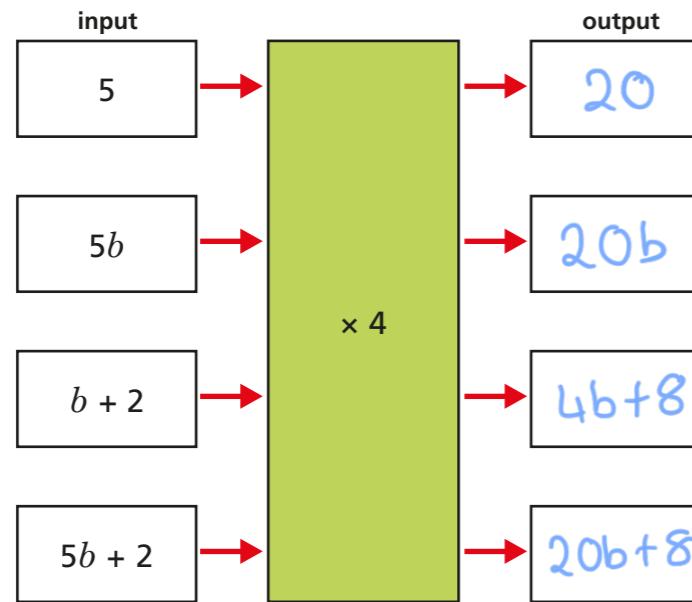
c) input $r + 7$ → $- 1$ → output $r + 6$

d) input $6r + 8$ → $- 6$ → output $6r + 2$

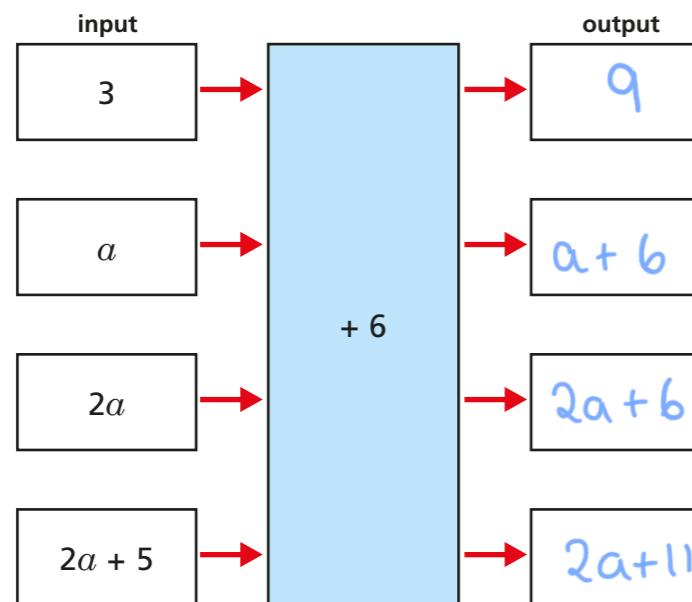
5

Complete the function machines.

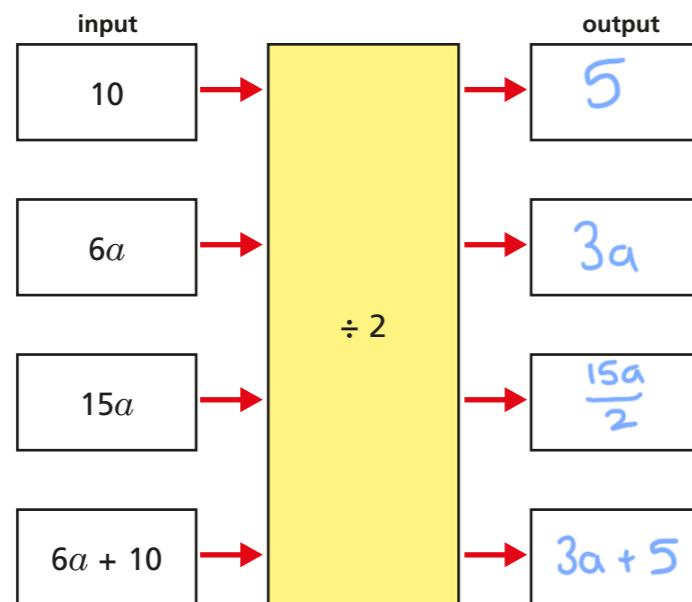
a)



b)



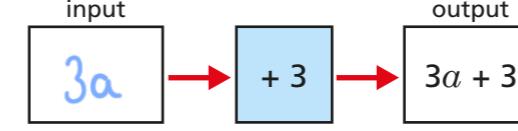
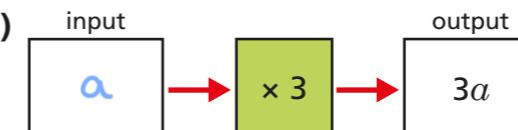
c)



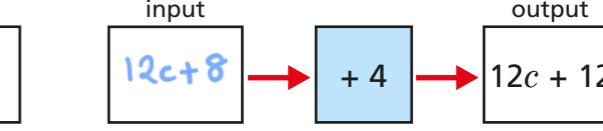
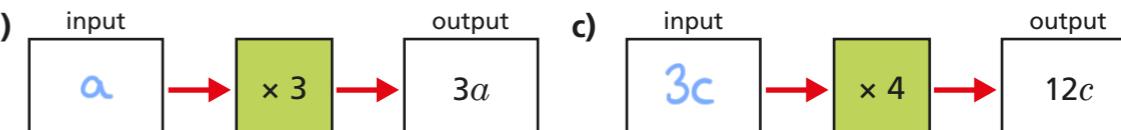
6

Complete the function machines.

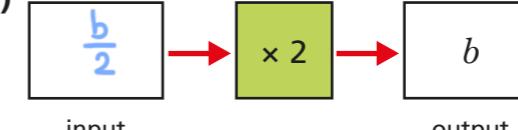
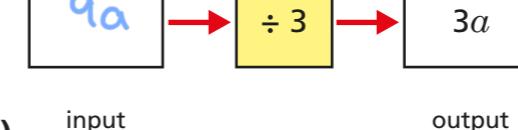
a)



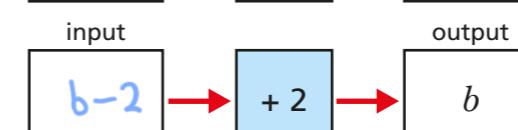
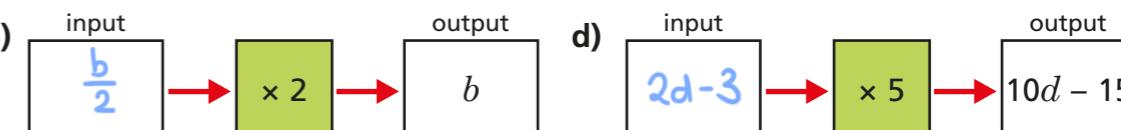
c)



b)



d)



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How many different function machines will give an output of $8g + 4$?

Draw the function machines.

Various answers e.g.

$$2g + 1 \rightarrow \times 4 \rightarrow 8g + 4$$

