Planner

Functions and mappings

- Using algebra to describe a mapping
- Completing a mapping diagram

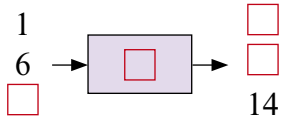
Keywords

You should know

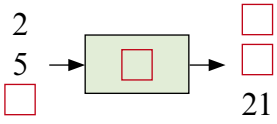
explanation 1

1 Copy and complete each function machine. Use the rules given.

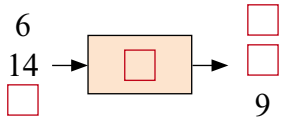
a $x \rightarrow x + 5$



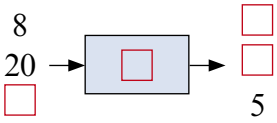
b $x \rightarrow 3x$



c $y = x - 4$

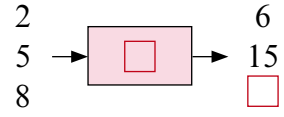


d $y = \frac{x}{2}$



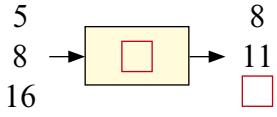
2 Copy and complete these function machines and their rules.

a



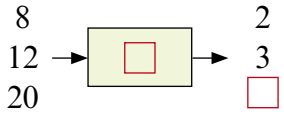
rule: $x \rightarrow$ _____

b



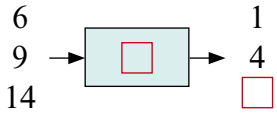
rule: $y =$ _____

c



rule: $x \rightarrow$ _____

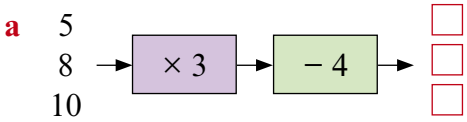
d



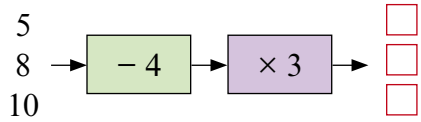
rule: $y =$ _____

3 Copy and complete these function machines.

a



b



***4** Which of these rules matches each function machine in question **3**?
Use the order of operations to explain how you know.

$x \to 3x - 4$ $x \to 3(x - 4)$ $x \to x - 4 \times 3$

explanation 2 online

5 In these questions, mappings are given using algebra.

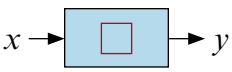
i Copy and complete each function machine.

ii Copy and complete each table.

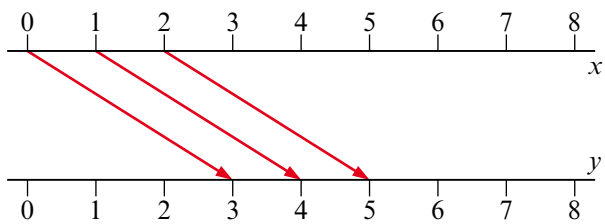
iii Copy and complete each mapping diagram.

a $x \to x + 3$

i



iii

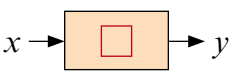


ii

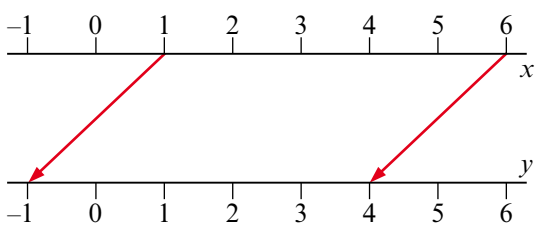
Input	Output
0	3
1	4
2	5
3	
4	
5	

b $x \to x - 2$

i



iii



ii

Input	Output
1	−1
2	
3	
4	
5	
6	4

6 In these questions, mappings are given using algebra.

i Copy and complete each function machine.

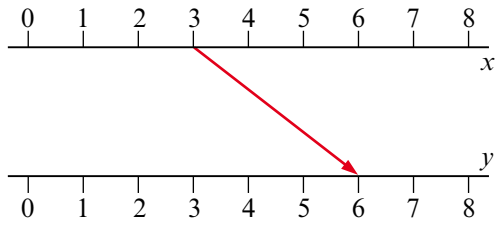
ii Copy and complete each table.

iii Copy and complete each mapping diagram.

a $x \to 2x$

i $x \to \square \to y$

iii



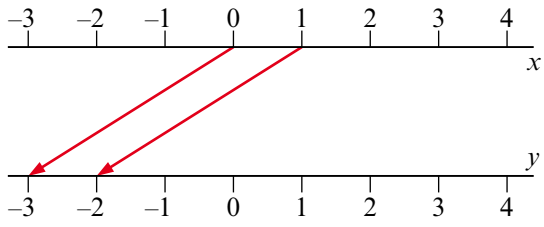
ii

Input	Output
0	
1	
2	
3	6
4	

b $x \to x - 3$

i $x \to \square \to y$

iii



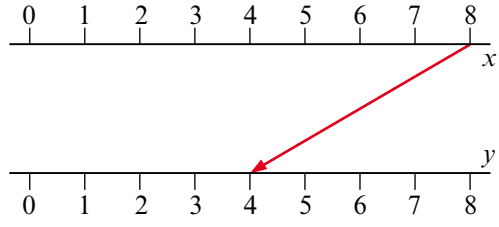
ii

Input	Output
0	−3
1	−2
2	
3	
4	

c $x \to \frac{x}{2}$

i $x \to \square \to y$

iii



ii

Input	Output
0	
2	
4	
6	
8	4

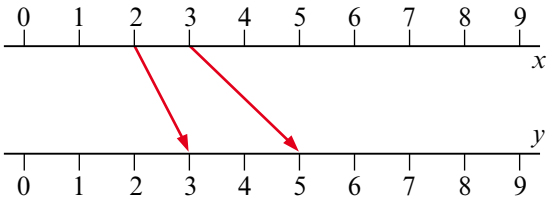
explanation 3 online

***7** For each mapping, copy and complete the function machine, table and mapping diagram.

a $x \to 2x - 1$

i $x \to \square \to \square \to y$

iii



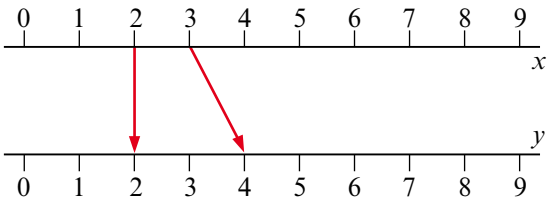
ii

Input	Output
1	
2	3
3	5
4	

b $x \to 2(x - 1)$

i $x \to \square \to \square \to y$

iii



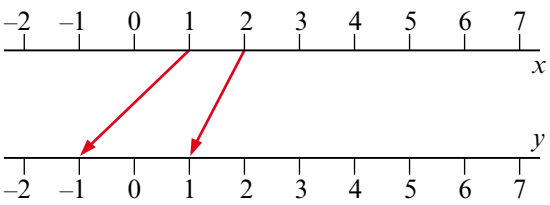
ii

Input	Output
1	
2	2
3	4
4	

c $x \to 2x - 3$

i $x \to \square \to \square \to y$

iii



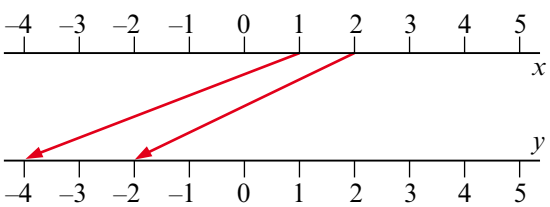
ii

Input	Output
1	−1
2	1
3	
4	

d $x \to 2(x - 3)$

i $x \to \square \to \square \to y$

iii



ii

Input	Output
1	−4
2	−2
3	
4	