

## Forming expressions

- 1 Tommy uses multilink cubes to represent an unknown number and base ten ones to represent 1

$$\begin{array}{c} \text{green cube} \\ \text{with two green dots} \end{array} = x \quad \begin{array}{c} \text{red cube} \\ \text{with one red dot} \end{array} = 1$$

Write algebraic expressions to describe the sets of cubes.

The first one has been done for you.

a)   $2x + 3$

b)   $3x + 5$

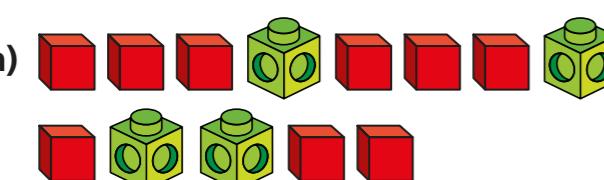
c)   $3x$

d)   $x + 3$

e)   $2x + 5$

f)   $5x + 2$

g)   $2x + 6$

h)   $4x + 9$

- 2 Use Tommy's method to represent these expressions.

a)  $x + 2$       c)  $3x + 1$

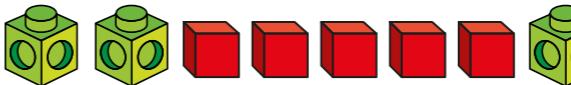
b)  $2x$       d)  $x + 6$

Compare answers with a partner.

- 3 Use cubes to help you simplify the following expressions.

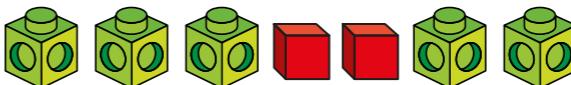
The first one has been done for you.

a)  $2y + 5 + y$



$3y + 5$

b)  $3a + 2 + a + a$



$5a + 2$

c)  $6p + 2 - 2p$



$4p + 2$

d)  $m + 4 + 3m - 3$

$4m + 1$

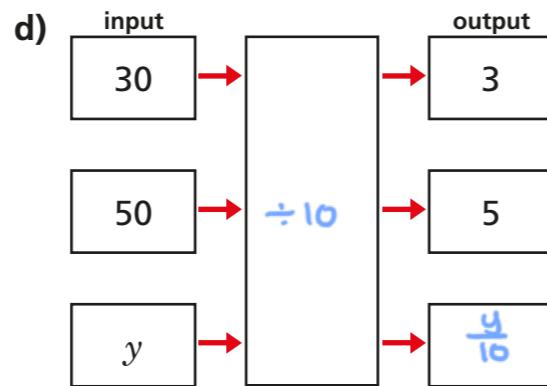
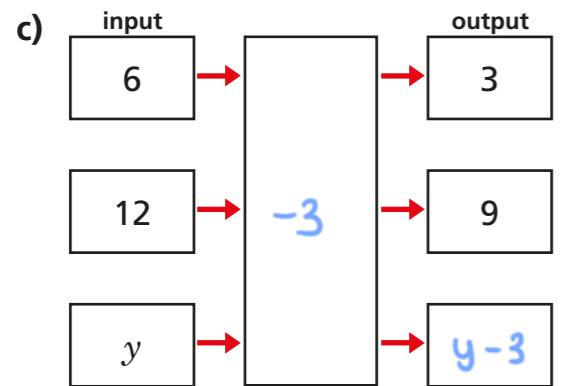
- 4 Complete the function machines.

a) input  $2 \rightarrow$   $\boxed{\quad}$  output  $6$   
 $7 \rightarrow$   $\boxed{+4}$   $\rightarrow$   $\boxed{11}$

$y \rightarrow$   $\boxed{\quad}$   $\rightarrow$   $\boxed{y+4}$

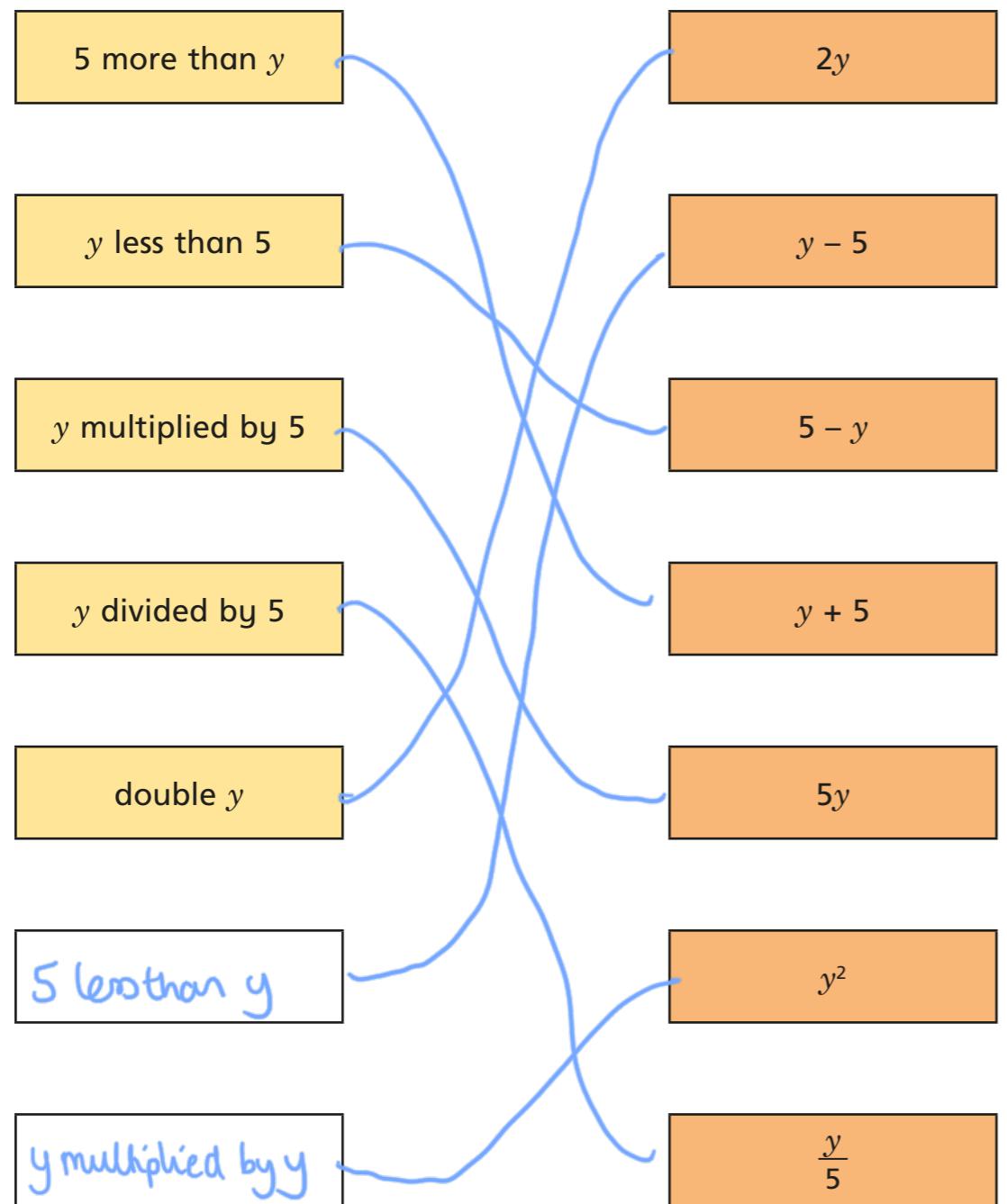
b) input  $2 \rightarrow$   $\boxed{\quad}$  output  $4$   
 $5 \rightarrow$   $\boxed{x2}$   $\rightarrow$   $\boxed{10}$

$y \rightarrow$   $\boxed{\quad}$   $\rightarrow$   $\boxed{2y}$

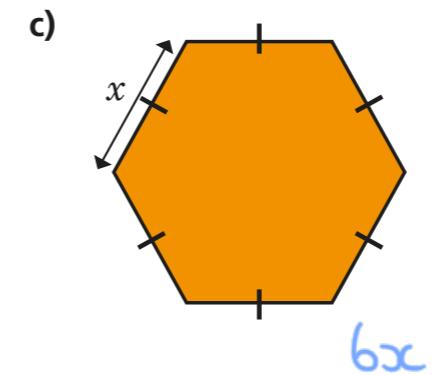
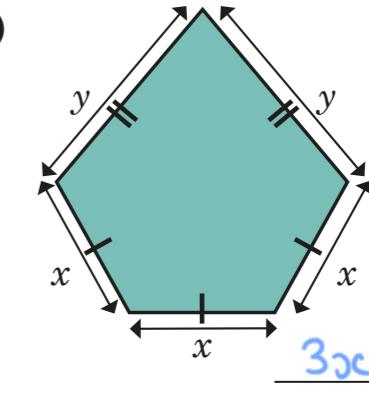
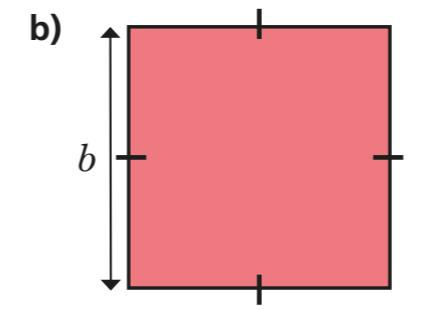
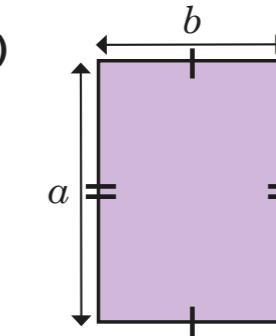
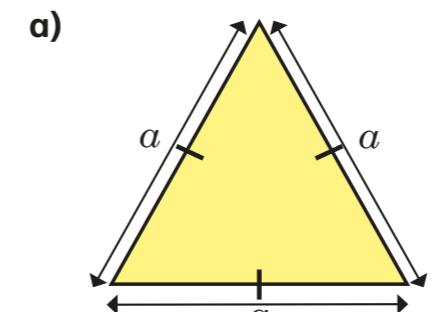


5 Match each statement to the equivalent algebraic expression.

Write the missing statements.



6 Write an algebraic expression to represent the perimeter of each shape.



7 Complete the bar models.

