

transformations

functions to instructions afl

# Describing transformations

## Instructions

- Describe each transformation in words.
- Draw a sketch to demonstrate the transformation.

### Example

The graph  $f(x)$  is transformed to

$$f(x) + 3$$

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### Solution

A translation by  $\begin{pmatrix} 0 \\ 3 \end{pmatrix}$  (move 3 units up).

## Question 1

The graph of  $f(x)$  is transformed to

$$f(x - 5)$$

## Question 2

The graph of  $f(x)$  is transformed to

$$f(x) + 6$$

## Question 3

The graph of  $f(x)$  is transformed to

$$3f(x)$$

## Question 4

The graph of  $f(x)$  is transformed to

$$f(x - 1) + 3$$



## Question 5

The graph of  $f(x)$  is transformed to

$$\frac{1}{2}f(x) - 7$$

## Question 6

The graph of  $f(x)$  is transformed to

$$f(3x)$$

## Question 7

The graph of  $f(x)$  is transformed to

$$-f(2x)$$

## Question 8

The graph of  $f(x)$  is transformed to

$$-f(x + 2) - 6$$

## Question 9

The graph of  $f(x)$  is transformed to

$$f(9 - x) + 8$$

## Question 10

The graph of  $f(x)$  is transformed to

$$-f(-3x) + 5$$