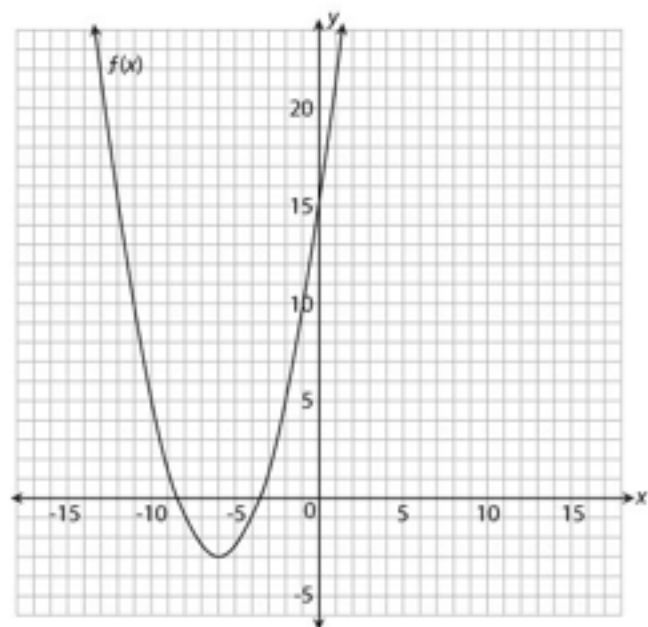


Vladmir sketches the graph of the function $f(x) = \frac{1}{2}(x + 6)^2 - 3$ as shown below.



He then translates this function 11 units to the right and 4 units down to obtain the new function

$g(x) = \frac{1}{2}(x - h)^2 + k$. What are the integer values for h and k ?

This equation describes function h .

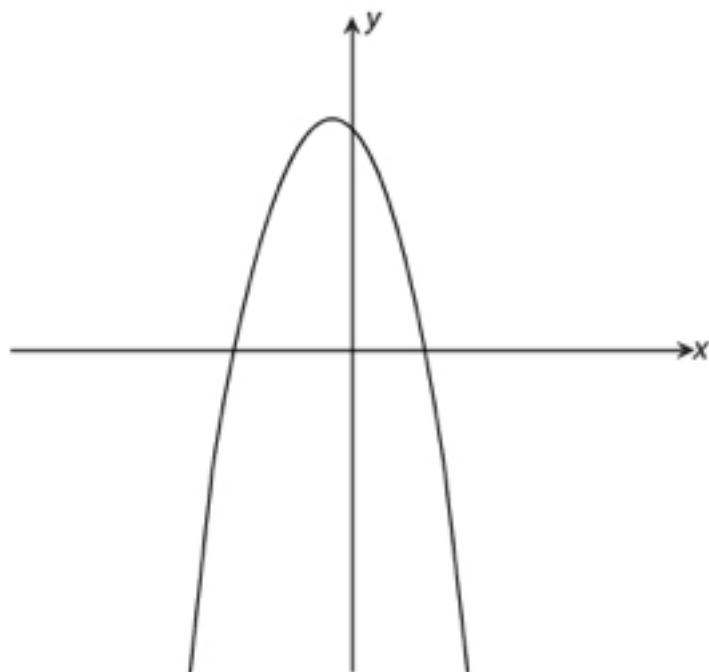
$$h(x) = \frac{1}{2}x - 4$$

The graph of function h is translated 2 units in a negative y -direction to form function j . Write an equation to describe function j . Show your work and explain your answer.

Pedro drew the graph of $y = 4(x - 7)^2 + 3$. How should he transform that graph to produce the graph of $y = 4(x - 12)^2 + 3$?

- A. He should shift it 5 units to the left.
- B. He should shift it 5 units up.
- C. He should shift it 5 units down.
- D. He should shift it 5 units to the right.

A portion of the graph of a function is shown on the coordinate plane below.



Drag and drop each equation into either the box below "Yes" or below "No" to indicate whether or not it could represent the graph of this function.

$$f(x) = -(x + 1)^2 + 7$$

$$f(x) = -(x + 2)^2 - 8$$

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

$$f(x) = (x + 3)(2 - x)$$

$$f(x) = -x^2 - 2x + 8$$

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