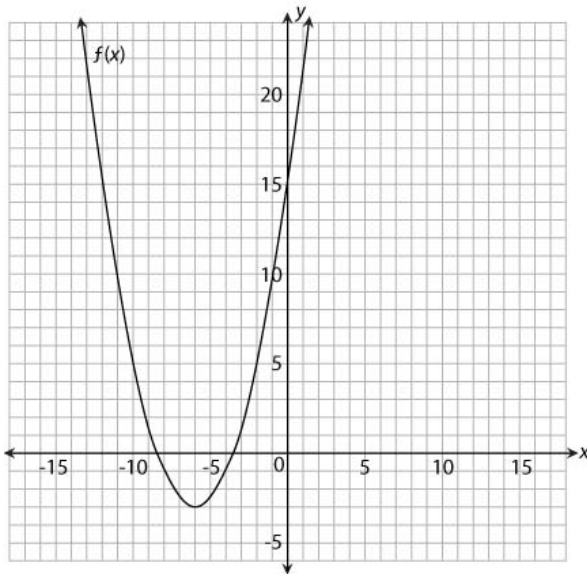Directions: Answer the following question(s).

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1 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?

Use the drop-down menus to choose the correct values of h and k.

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2 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.

3 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 down.

C. He should shift it 5 units up.

D. He should shift it 5 units to the right.

4 Which equation represents a parabola with the same vertex as $y = 4(x-5)^2 + 20$ but that opens in the opposite direction?

A. $y = -4(x+5)^2 - 20$

B. $y = -4(x-5)^2 + 20$

C. $y = 4(x+5)^2 - 20$

D. $y = 4(x+5)^2 + 20$

5 The parent function for a quadratic is represented by $f(x) = x^2$.

Drag and drop the "X" into each box that represents the transformation of the function from the parent function $f(x) = x^2$. A function may have more than one transformation.

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