1. Use the Parent function and Function 2 to choose the best statement comparing the graphs to each other.

Parent Function: \( y = \frac{1}{5}x^2 \)  
Function 2: \( y = \frac{1}{5}x^2 + 7 \)

A. Function 2’s graph is shifted down 7 units from the Parent Function’s graph.
B. Function 2’s graph is shifted up 7 units from the Parent Function’s graph.
C. Function 2’s graph is shifted left 7 units from the Parent Function’s graph.
D. Function 2’s graph is shifted right 7 units from the Parent Function’s graph.

2. Given \( y = 2x + 7 \), write an equation whose graph is shifted 3 units to the right.

3. The equation \( y = 3x^2 - 3 \) is graphed below on Graph A. What is the equation graphed on Graph B?

![Graph A](image1.png)  
![Graph B](image2.png)

Equation of function in Graph B _____________________
4. Use the two given functions to choose the best statement comparing the graphs to each other.

Function 1: \( y = 2^x + 4 \)  
Function 2: \( y = 2^{x+5} - 2 \)

A. Function 2’s graph is shifted up 6 units and right 5 units from Function 1’s graph.
B. Function 2’s graph is shifted up 5 units and down 2 units from Function 1’s graph.
C. Function 2’s graph is shifted right 5 units and down 6 units from Function 1’s graph.
D. Function 2’s graph is shifted left 5 units and down 6 units from Function 1’s graph.

5. Given \( y = 2|x| + 5 \), write an equation whose graph is reflected, shifted to the left 2 units and shifted up 4 units.

6. Use the two given functions to describe the horizontal and vertical shifts from the graph of Function 1 to the graph of Function 2.

Function 1: \( y = (x - 3)^2 + 1 \)  
Function 2: \( y = (x + 2)^2 - 3 \)

Describe:

Now write an equation for Function 3 whose graph is only shifted right 2 units and up 3 units from Function 2’s graph.

7. Given \( y = 3x - 7 \), write an equation whose graph is reflected and more steep.
8. Use the two given functions to choose the best statement comparing the graphs to each other.

Function 1: \( y = 3(x - 4)^2 \)  
Function 2: \( y = \frac{3}{4}(x - 4)^2 \)

A. Function 2's graph is less steep (wider) than Function 1’s graph and is reflected.
B. Function 2’s graph is more steep (narrower) than Function 1’s graph and is reflected.
C. Function 2’s graph is less steep (wider) than Function 1’s graph and is not reflected.
D. Function 2’s graph is more steep (narrower) than Function 1’s graph and is not reflected.

9. The equation \( y = -2(x + 2)^2 + 3 \) is graphed below on Graph A. What is the equation graphed on Graph B?

Graph A

\[
\begin{array}{c}
\text{Graph B} \\
\end{array}
\]

Equation of function in Graph B ______________________

10. Use the two given functions to describe the horizontal and vertical shifts from the graph of Function 1 to the graph of Function 2.

Function 1: \( y = 3(x - 5) + 1 \)  
Function 2: \( y = -1(x + 2) - 2 \)

Describe:

Now write an equation for Function 3 whose graph is shifted right 1 unit and down 2 units from Function 2’s graph, and is reflected
11. Use the two given functions to choose the best statement comparing the graphs to each other.

Function 1: \( y = 3^{x+4} + 2 \)

Function 2: \( y = -3^x - 3 \)

A. Function 2’s graph is shifted down 5 units, shifted right 4 units from Function 1’s graph and \textit{is} reflected.

B. Function 2’s graph is shifted up 5 units, shifted left 2 units from Function 1’s graph and \textit{is} reflected.

C. Function 2’s graph is shifted down 4 units, shifted right 5 units from Function 1’s graph and \textit{is} reflected.

D. Function 2’s graph is shifted down 4 units, shifted left 5 units from Function 1’s graph and \textit{is not} reflected.

12. The equation \( y = \frac{2}{5}x - 2 \) is graphed below on \textbf{Graph A} and has been transformed on \textbf{Graph B}:

Use the two given graphs to choose the best statement \textit{comparing the graphs to each other}.

A. Graph B is reflected and is more steep than Graph A.

B. Graph B is not reflected and is more steep than Graph A.

C. Graph B is reflected and is less steep than Graph A.

D. Graph B is not reflected and is less steep than Graph A.

13. Given \( f(x) = 2^x \), write an equation whose graph is shifted to the right 5 units is reflected.