Each of the following is a graph of a function, \( f(x) \).

A) Draw each function, \( g(x) \), by transforming \( f(x) \).

B) Above each graph, state the type of transformation used and the order in which you performed it.

1. \( g(x) = -f(x) \)
2. \( g(x) = f(x - 4) \)
3. \( g(x) = 4 \cdot f(x) \)
4. \( g(x) = f(-x) \)
5. \( g(x) = -f(x + 4) \)
6. \( g(x) = \frac{1}{2} \cdot f(x) - 6 \)

Use the description of the transformations in order to write the function \( g(x) \).

7. The parent function \( f(x) = \sqrt{x} \) is reflected across the X-axis and translated 8 units left in order to create \( g(x) \).

8. The parent function \( f(x) = |x| \) is translated 4 units down followed by a vertical stretch of a factor of 7, and then reflected across the Y-axis in order to create \( g(x) \).
9. The parent function \( f(x) = \sqrt{x} \) is translated 6 units down followed by a vertical shrink of a factor of 1/2 in order to create \( g(x) \).

10. The parent function \( f(x) = |x| \) is translated 4.5 units up and translated 9 units right in order to create \( g(x) \).

11. The function \( f(x) \) is translated 9 units up followed by a reflection across the X-axis in order to create \( g(x) \).

12. The function \( f(x) \) is a translated 3 units right followed by a reflected across the Y-axis right order to create \( g(x) \).
   (This one is tricky.)

REVIEW:  First graph the parent function. Then graph the function, \( g(x) \), by using transformations. State the type of transformations that you used in the order that you used them in. (Be very specific.)

13. \( g(x) = \frac{1}{3}|x| - 6 \)

14. \( g(x) = \sqrt{-x} + 4 \)  TRICKY! REWRITE \(-x + 4\)

15. \( g(x) = -|x + 2| + 5 \)

16. \( g(x) = -3\sqrt{-x} \)