

Name: _____

Date: _____

Math 12 Honors Ch2 Transformation Review

1. Given that the domain and range of the function $y = f(x)$ is $D: -5 \leq x < 12$ and $R: y < 0$ and $8 \leq y$,

a) what is the domain and range of $y = 3f(2x+1) - 2$

b) what is the domain and range of $y = 2f^{-1}(x)$

c) what is the domain and range of $y = \frac{1}{f(2x)-3}$

d) what is the domain and range of $y = f(|x|)$

e) what is the domain and range of $y = f(|2x|)$

f) what is the domain and range of $|y| = f(x)$

g) what is the domain and range of $|y| = f(|x|)$

2. Determine the equation of the function $y = \frac{(x-3)^2 + 4}{x-4}$ after the vertical expansion by 3, a horizontal compression by $\frac{1}{2}$, and shifts of 3 units up and 4 units left.

3. Indicate the transformations from the equation on the left to the equation on the right. If the coordinates (a,b) is on the left function, what will the coordinate become on the right function?

a) $y = f(x) \rightarrow y = -0.5f\left(\frac{1}{4}(x-3)\right) + 2$

b) $y = f(x) \rightarrow y = -2f\left(\frac{5}{3}(x+3)\right) + 11$

c) $y = f(x) \rightarrow y = 4f\left(\frac{x}{4}-7\right) - 3$

d) $y = f(x) \rightarrow y + 2 = -5f(12 - 3x)$

e) $y = f(x) \rightarrow 2y + 3 = -3f\left(6 - \frac{3x}{4}\right)$

f) $y = f(x) \rightarrow \frac{2}{3}(6 - y) = f\left(3 - \frac{x}{4}\right)$

4. Indicate the transformations from the equation on the left to the equation on the right:

a) $y = 2f(x+1) - 3 \rightarrow y = 4f^{-1}(3x-1) + 11$

b) $y = \frac{1}{2}f\left(\frac{x-1}{2}\right) \rightarrow y = \frac{2}{f(x-1)}$

c) $y = f(3x+1) \rightarrow y = \frac{1}{f^{-1}(3x+1)} + 2$

d) $y = f(2x) \rightarrow y = f^{-1}(|x-1|)$

e) $y = f(x+1) \rightarrow y = |2f^{-1}(|x-1|)|$

5. Given that the coordinate $(2a+1, 3b-2)$ is on the function $y = 3f(2x) + 1$, what will the coordinate become after each transformation:

a) $y = 3f(2x) + 1 \rightarrow y = f(x)$

b) $y = 3f(2x) + 1 \rightarrow y = 3f\left(\frac{1}{2}x - 5\right)$

c) $y = 3f(2x) + 1 \rightarrow y = f(|2x|)$

d) $y = 3f^{-1}(x) \rightarrow y = \frac{1}{3f(x) + 2} + 2$

6. To transform the function $y = f(x)$ to $y = g(x)$ you can either do a translation of 3 units right OR 4 units up. Find a pair of functions $f(x)$ and $g(x)$ that meet this requirement
7. To transform the function $y = f(x)$ to $y = g(x)$ you can either do a vertical expansion of 8 OR a horizontal shift of 3 units right. Find a pair of functions $f(x)$ and $g(x)$ that meet this requirement
8. To transform the function $y = f(x)$ to $y = g(x)$ you can either do a vertical reflection OR a horizontal reflection. Find a pair of functions $f(x)$ and $g(x)$ that meet this requirement
9. Given that the dotted graph is the function $y = f(x)$, what is the function of the solid graph?



