Name _____ Date _____

5.3 Practice B

In Exercises 1–8, describe the transformation of *f* represented by *g*. Then graph each function.

1. $f(x) = e^x, g(x) = e^x - 4$

2. $f(x) = 4^x, g(x) = 4^{x+2}$

3. $f(x) = e^{-x}, g(x) = e^{-x} - 5$

4. $f(x) = \left(\frac{1}{3}\right)^x, g(x) = \left(\frac{1}{3}\right)^x + 2$

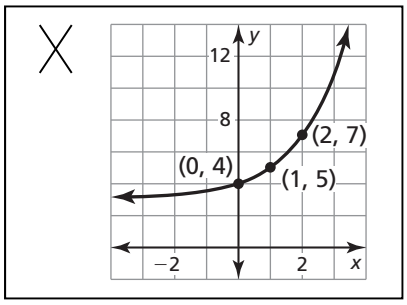
5. $f(x) = 3^x, g(x) = 3^{2x} - 1$

6. $f(x) = e^x, g(x) = -e^{x+2}$

7. $f(x) = e^{-x}, g(x) = e^{-4x+1}$

8. $f(x) = \left(\frac{1}{3}\right)^x, g(x) = \left(\frac{1}{3}\right)^{x-2} + 3$

9. Describe and correct the error in graphing the function $f(x) = 2^{x+3}$.



In Exercises 10 and 11, describe the transformation of *f* represented by *g*. Then graph each function.

10. $f(x) = \log_4 x, g(x) = \log_4(x - 2) + 4$

11. $f(x) = \log_{1/3} x, g(x) = -\log_{1/3}(-x)$

In Exercises 12–14, write a rule for *g* that represents the indicated transformation of the graph of *f*.

12. $f(x) = \left(\frac{2}{5}\right)^x$; reflection in the *y*-axis, followed by a horizontal shrink by a factor of 2 and a translation 4 units down

13. $f(x) = e^{-x}$; translation 2 units left and 3 units up, followed by a vertical stretch by a factor of 2

14. $f(x) = \log_{12} x$; translation 5 units right and 2 units down, followed by a reflection in the *x*-axis