Name _____ Date _____

10.5 Extra Practice

In Exercises 1–4, graph one period of the function. Describe the graph of *g* as a transformation of the graph of its parent function.

1. $g(x) = 2 \tan 4x$

2. $g(x) = 3 \cot \frac{1}{2}x$

3. $g(x) = \frac{1}{4} \tan 2\pi x$

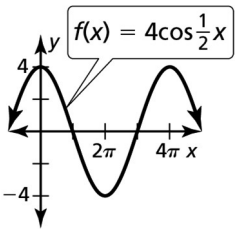
4. $g(x) = \frac{1}{3} \cot \pi x$

5. Describe and correct the error in describing the transformation of $f(x) = \tan x$ represented by $g(x) = 4 \tan \frac{1}{2}x$.

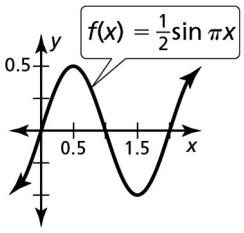
> ✗ A vertical stretch by a factor of 4 and a horizontal shrink by a factor of $\frac{1}{2}$

In Exercises 6 and 7, graph *g* using the graph of *f* as a guide.

6. $g(x) = 4 \sec \frac{1}{2}x$



7. $g(x) = \frac{1}{2} \csc \pi x$



In Exercises 8–11, graph one period of the function. Describe the graph of *g* as a transformation of the graph of its parent function.

8. $g(x) = \frac{1}{3} \csc \pi x$

9. $g(x) = \frac{1}{2} \sec 6x$

10. $g(x) = \sec \frac{\pi}{2}x$

11. $g(x) = \csc \frac{\pi}{3}x$

12. You are standing 100 feet from the base of a 150-foot cliff. Your friend is rappelling down the cliff.

a. Write an equation that gives the distance d (in feet) your friend is from the top of the cliff as a function of the angle of elevation θ.

b. Graph the function found in part (a). Explain how to graph relates to the situation.