Name

Class

Date

Reciprocal Trigonometric Functions

**Find each value without using a calculator. If the expression is undefined, write *undefined****.*

**1.** csc (−*π*) **2. ** **3.**

**4. ** **5. ** **6. **

**Graphing Calculator Use a calculator to find each value. Round your answers to the nearest thousandth.**

**7.** cot 42º **8.** csc  **9.** csc (–2)

**10.** sec *π* **11.** cot (–4) **12.** sec (–35º)

**13.** A sparrow perches on the ledge of a building. It is 122 ft above the ground. It looks down at a squirrel along a line of sight that makes an angle of u with the building. The distance in feet of an object on the ground from the sparrow is modeled by the function *d* = 122sec *θ*. How far away are squirrels sighted at angles of 35° and 50°?

**Describe any phase shift and vertical shift in the graph.**

**14. ** **15.** *y* = csc 2*θ* + 1

**16.**   **17.** *y* = csc *θ* − 1

**18.** A fire truck is parked on the shoulder of a freeway next to a long wall. The red light on the top of the truck rotates through one complete revolution every 2 s. The function *y* = 10 sec *πt* models the length of the beam in feet to a point on the wall in terms of time *t*.

**a.** Find the length at time 1.75 s.

**b.** Find the length at time 2 s.