GRAPHING Graph the function.

6. $y = \sin \frac{1}{5}x$ 7. $y = 4 \cos x$ 8. $f(x) = \cos \frac{2}{5}x$ 9. $y = \sin \pi x$

10. $f(x) = \frac{2}{3} \sin x$ 11. $f(x) = \sin \frac{\pi}{2}x$ 12. $y = \frac{\pi}{4} \cos x$ 13. $f(x) = \cos 24x$

14. **ERROR ANALYSIS** *Describe* and correct the error in finding the period of the function $y = \sin \frac{2}{3}x$.

$$\text{Period} = \frac{|b|}{2\pi} = \frac{\left|\frac{2}{3}\right|}{2\pi} = \frac{1}{3\pi} \quad \times$$

15. ◤ **TAKS REASONING** The graph of which function has an amplitude of 4 and a period of 2?

    A $y = 4 \cos 2x$ **B** $y = 2 \sin 4x$ **C** $y = 4 \sin \pi x$ **D** $y = 2 \cos \frac{1}{2}\pi x$

GRAPHING Graph the function.

16. $y = 2 \sin 8x$ 17. $f(x) = 4 \tan x$ 18. $y = 3 \cos \pi x$ 19. $y = 5 \sin 2x$

20. $f(x) = 2 \tan 4x$ 21. $y = 2 \cos \frac{1}{4}\pi x$ 22. $f(x) = 4 \tan \pi x$ 23. $y = \pi \cos 4\pi x$

24. ◤ **TAKS REASONING** Which of the following is an asymptote of the graph of $y = 2 \tan 3x$?

    A $x = \frac{\pi}{6}$ **B** $x = -\pi$ **C** $x = \frac{1}{6}$ **D** $x = -\frac{\pi}{12}$

25. ◤ **TAKS REASONING** *Describe* a real-life situation that can be modeled by a periodic function.

CHALLENGE Sketch the graph of the function by plotting points. Then state the function's domain, range, and period.

26. $y = \csc x$ 27. $y = \sec x$ 28. $y = \cot x$

PROBLEM SOLVING

29. **PENDULUMS** The motion of a certain pendulum can be modeled by the function $d = 4 \cos \pi t$ where d is the pendulum's horizontal displacement (in inches) relative to its position at rest and t is the time (in seconds). Graph the function. What is the greatest horizontal distance the pendulum will travel from its position at rest?

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30. **TUNING FORKS** A tuning fork produces a sound pressure wave that can be modeled by

$$P = 0.001 \sin 880t$$

where P is the pressure (in pascals) and t is the time (in seconds). Find the period and frequency of this function. Then graph the function.

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