In Exercises 1–6, find the amplitude of the function and use the language of transformations to describe how the graph of the function is related to the graph of $y = \sin x$.

2. $y = \frac{2}{3} \sin x$

4. $y = -\frac{7}{4} \sin x$

6. $y = -2.34 \sin x$

In Exercises 7–12, find the period of the function and use the language of transformations to describe how the graph of the function is related to the graph of $y = \cos x$.

7. $y = \cos 3x$

8. $y = \cos x/5$

11. $y = 3 \cos 2x$

12. $y = \frac{1}{4} \cos \frac{2x}{3}$

In Exercises 13–16, find the amplitude, period, and frequency of the function and use this information (not your calculator) to sketch a graph of the function in the window $[-3\pi, 3\pi]$ by $[-4, 4]$.

14. $y = 2\cos\frac{x}{3}$

15. $y = -\frac{3}{2}\sin 2x$

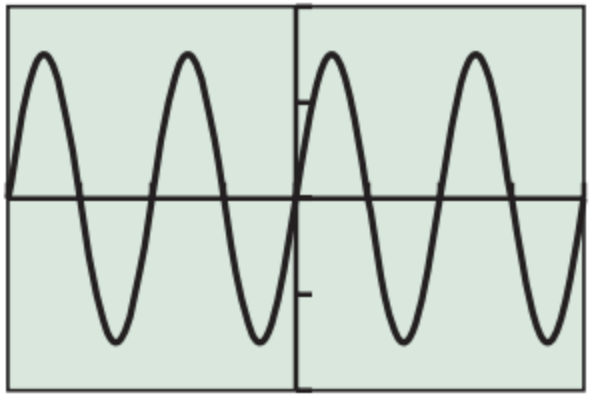
In Exercises 17–22, graph one period of the function. Use your understanding of transformations, not your graphing calculators. Be sure to show the scale on both axes.

18. $y = 2.5 \sin x$

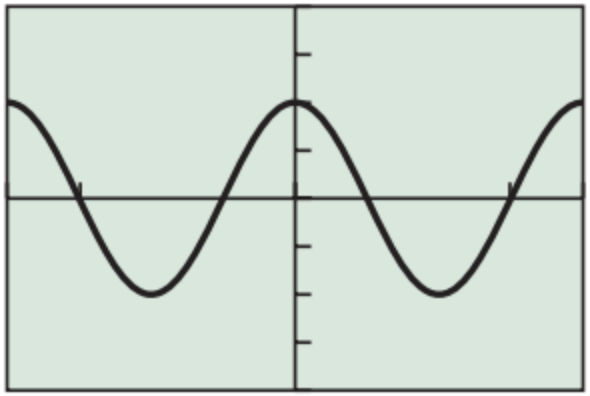
20. $y = -2 \cos x$

In Exercises 29–34, specify the period and amplitude of each function. Then give the viewing window in which the graph is shown. Use your understanding of transformations, not your graphing calculators.

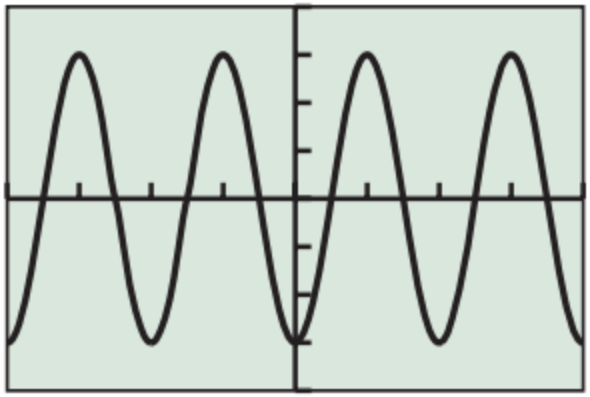
29. $y = 1.5 \sin 2x$



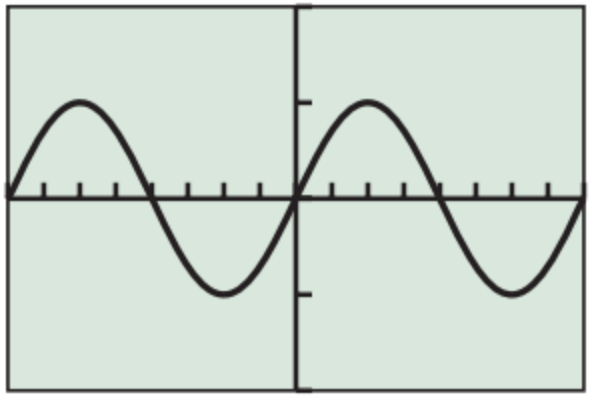
30. $y = 2 \cos 3x$



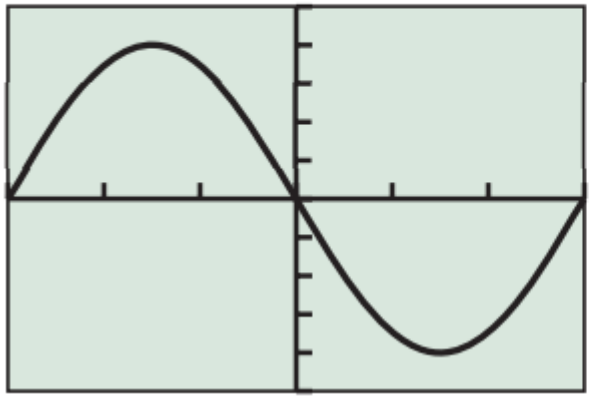
31. $y = -3 \cos 2x$



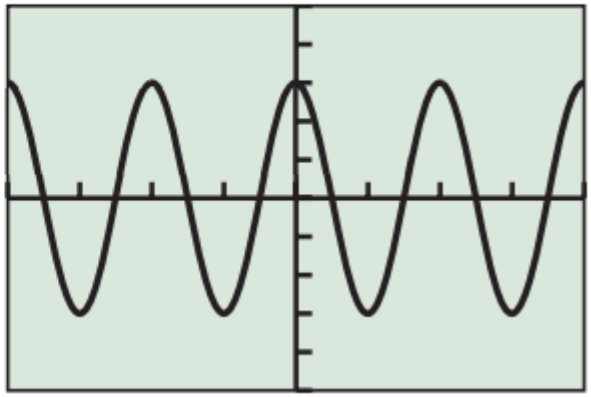
32. $y = 5 \sin \frac{x}{2}$



33. $y = -4 \sin \frac{\pi}{3}x$



34. $y = 3 \cos \pi x$



In Exercises 35–40, identify the maximum and minimum values and the zeros of the function in the interval $[-2\pi, 2\pi]$. Use your understanding of transformations, not your graphing calculators.

35. $y = 2 \sin x$

36. $y = 3 \cos \frac{x}{2}$

37. $y = \cos 2x$

38. $y = \frac{1}{2} \sin x$

39. $y = -\cos 2x$

40. $y = -2 \sin x$

41. Write the function $y = -\sin x$ as a phase shift of $y = \sin x$.

42. Write the function $y = -\cos x$ as a phase shift of $y = \sin x$.

In Exercises 57–60, construct a sinusoid with the given amplitude and period that goes through the given point.

57. Amplitude 3, period π, point $(0, 0)$

58. Amplitude 2, period 3π, point $(0, 0)$

59. Amplitude 1.5, period $\pi/6$, point $(1, 0)$

73. Ferris Wheel A Ferris wheel 50 ft in diameter makes one revolution every 40 sec. If the center of the wheel is 30 ft above the ground, how long after reaching the low point is a rider 50 ft above the ground?

79. Temperature Data The normal monthly Fahrenheit temperatures in Albuquerque, NM are shown in the table below (month 1 = Jan, month 2 = Feb, etc.):

Month	1	2	3	4	5	6	7	8	9	10	11	12
Temp	36	41	48	56	65	75	79	76	69	57	44	36

Source: National Climatic Data Center, as reported in The World Almanac and Book of Facts, 2005.

Model the temperature T as a sinusoidal function of time, using 36 as the minimum value and 79 as the maximum value. Support your answer graphically by graphing your function with a scatter plot.