MATCHING GRAPHS **Match the function with its graph.**

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

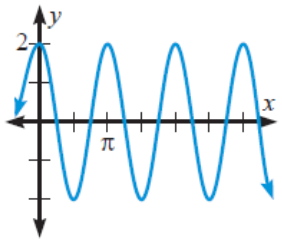
18. $y = 2 \cos \frac{1}{2}x$

19. $y = 2 \sin 2x$

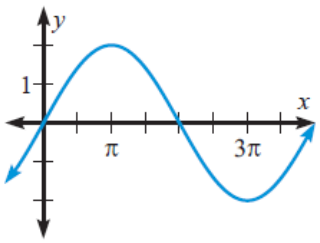
21. $y = 2 \cos 2x$

22. $y = 2 \tan 2x$

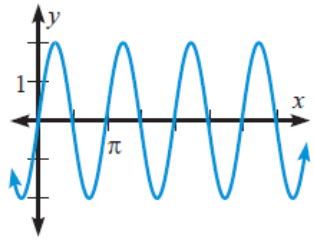
A.



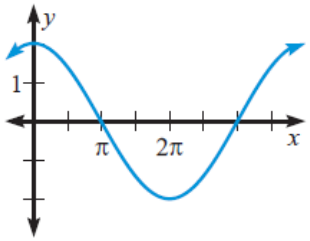
B.



D.

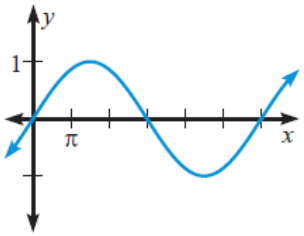


E.



ANALYZING FUNCTIONS **In Exercises 23–31, find the amplitude and period of the graph of the function.**

23.



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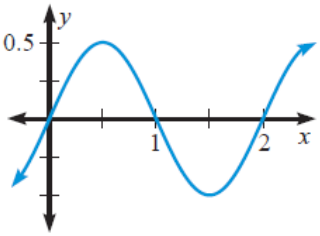
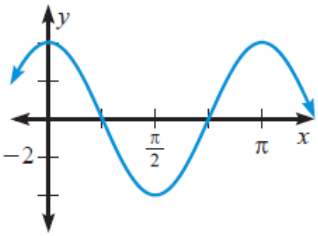


25.



26. $y = \frac{1}{2} \cos \pi x$

27. $y = \sin 2x$

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

29. $y = 5 \cos \frac{1}{2}x$

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

31. $y = \frac{1}{3} \sin 4\pi x$

MULTIPLE CHOICE Which of the following is an x-intercept of the graph of $y = \frac{1}{3} \sin \frac{\pi}{4}x$?

(A) 4 **(B)** 2 **(C)** -6 **(D)** 1 **(E)** 4π

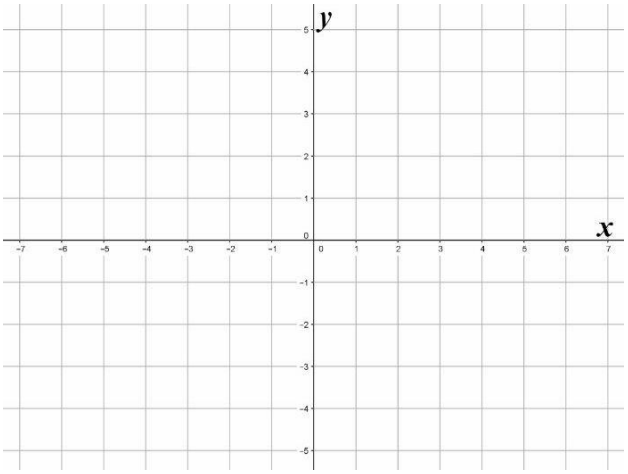
GRAPHING **Draw one cycle of the function's graph.**

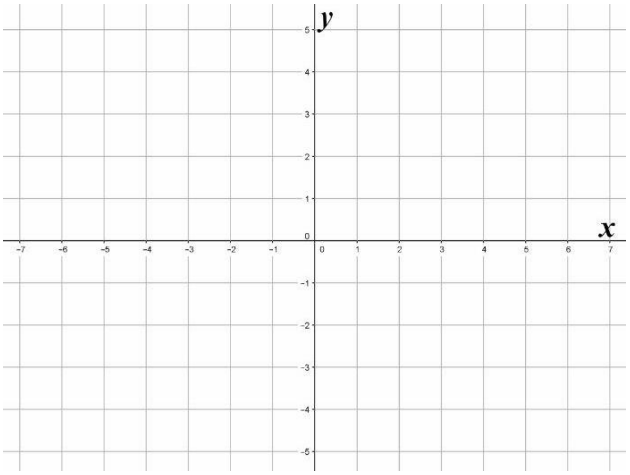
32. $y = \sin \frac{1}{4}x$

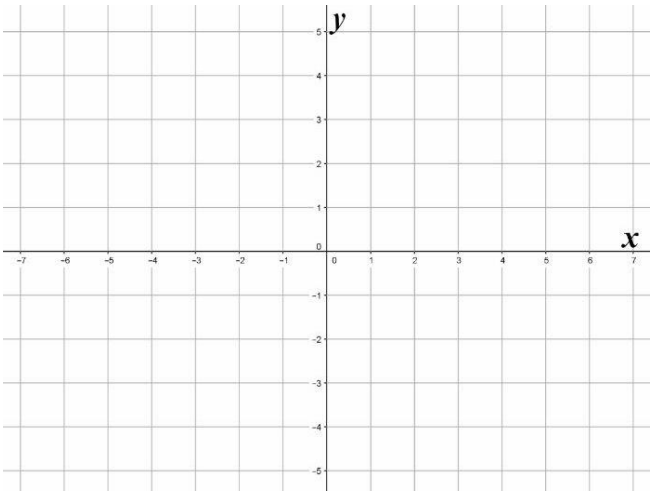
33. $y = \cos \frac{1}{5}x$

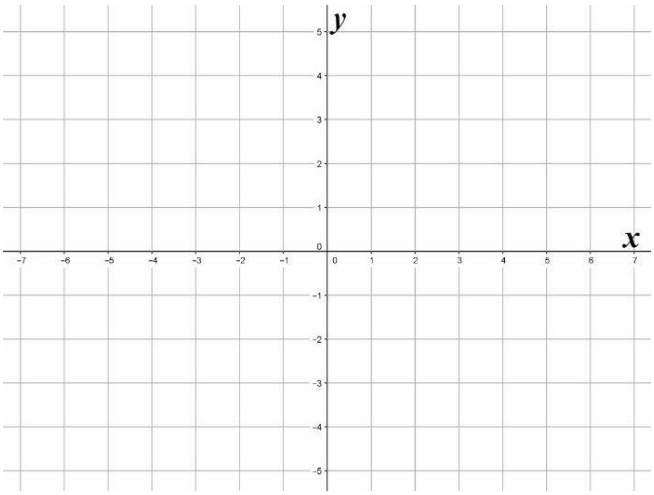
39. $y = 8 \sin x$

43. $y = 2 \cos 6\pi x$









WRITING EQUATIONS **Write an equation of the form $y = a \sin bx$, where $a > 0$ and $b > 0$, so that the graph has the given amplitude and period.**

44. Amplitude: 1
Period: 5

45. Amplitude: 10
Period: 4

46. Amplitude: 2
Period: 2π

47. Amplitude: $\frac{1}{2}$
Period: 3π

48. Amplitude: 4
Period: $\frac{\pi}{6}$

49. Amplitude: 3
Period: $\frac{1}{2}$