State the amplitude, period, phase shift, and vertical shift. Then graph for one period.

1. $y = 3 \sin x$

2. $y = \sin x + 3$

3. $y = -\sin x$

4. $y = \cos 2x$

5. $y = \cos x - 2$

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

7. $y = 2 \sin x + 1$

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

9. $y = 2 \sin x$

10. $y = -2 \sin x$

11. $y = \sin 2x$

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

13. $y = \cos 2x$

14. $y = -2 \cos 2x$

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

16. $y = -\frac{1}{2} \cos \frac{1}{3}x$

17. $y = 4 \cos 2x$

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

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

20. $y = -5 \sin \frac{2}{3}x$

21. $y = 3 \cos x + 1$

22. $y = \cos 2x - 2$

23. $y = 4 \sin \frac{1}{2}x + 1$

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

25. $y = \sin \left(x + \frac{\pi}{6}\right)$

26. $y = \cos \left(x - \frac{\pi}{4}\right)$

27. $y = 2 \sin \left(x - \frac{\pi}{3}\right)$

28. $y = -3 \cos \left(x - \frac{\pi}{6}\right)$

29. $y = 2 \sin \left(2x + \frac{\pi}{3}\right)$

30. $y = \cos \left(x - \frac{\pi}{4}\right) + 2$

31. $y = -\frac{1}{2} \sin(3x + \pi)$

32. $y = 3 \cos(2x - \pi)$

33. $y = 2 \sin \left(2x + \frac{\pi}{3}\right) - 3$

34. $y = 3 \cos \left(\frac{1}{2}x + \frac{\pi}{2}\right) + 1$

35. $y = -2 \sin \left(2x - \frac{\pi}{3}\right) + 2$

36. $y = 2 \sin(3x + \pi) - 3$