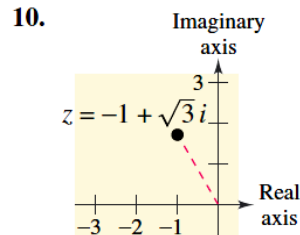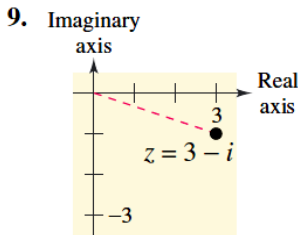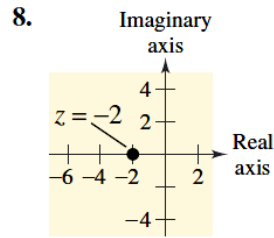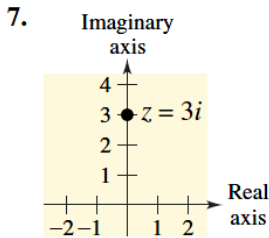In Exercises 1–6, plot the complex number and find its absolute value.

1. $-7i$

2. -7

3. $-4 + 4i$

4. $5 - 12i$

5. $6 - 7i$

6. $-8 + 3i$

In Exercises 7–10, write the complex number in trigonometric form.

7.

8.

9.

10.

In Exercises 11–30, represent the complex number graphically, and find the trigonometric form of the number.

11. $3 - 3i$

12. $2 + 2i$

13. $\sqrt{3} + i$

14. $4 - 4\sqrt{3}i$

15. $-2(1 + \sqrt{3}i)$

16. $\frac{5}{2}(\sqrt{3} - i)$

17. $-5i$

18. $4i$

19. $-7 + 4i$

20. $3 - i$

21. 7

22. 4

23. $3 + \sqrt{3}i$

24. $2\sqrt{2} - i$

25. $-3 - i$

26. $1 + 3i$

27. $5 + 2i$

28. $8 + 3i$

29. $-8 - 5\sqrt{3}i$

30. $-9 - 2\sqrt{10}i$

In Exercises 31–40, represent the complex number graphically, and find the standard form of the number.

31. $3(\cos 120° + i \sin 120°)$

32. $5(\cos 135° + i \sin 135°)$

33. $\frac{3}{2}(\cos 300° + i \sin 300°)$

34. $\frac{1}{4}(\cos 225° + i \sin 225°)$

35. $3.75\left(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4}\right)$

36. $6\left(\cos \frac{5\pi}{12} + i \sin \frac{5\pi}{12}\right)$

37. $8\left(\cos \frac{\pi}{2} + i \sin \frac{\pi}{2}\right)$

38. $7(\cos 0 + i \sin 0)$

In Exercises 47–58, perform the operation and leave the result in trigonometric form.

47. $\left[2\left(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4}\right)\right]\left[6\left(\cos \frac{\pi}{12} + i \sin \frac{\pi}{12}\right)\right]$

48. $\left[\frac{3}{4}\left(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3}\right)\right]\left[4\left(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4}\right)\right]$

49. $\left[\frac{5}{3}(\cos 140° + i \sin 140°)\right]\left[\frac{2}{3}(\cos 60° + i \sin 60°)\right]$

50. $[0.5(\cos 100° + i \sin 100°)] \times$ $[0.8(\cos 300° + i \sin 300°)]$

51. $[0.45(\cos 310° + i \sin 310°)] \times$ $[0.60(\cos 200° + i \sin 200°)]$

52. $(\cos 5° + i \sin 5°)(\cos 20° + i \sin 20°)$

53. $\dfrac{\cos 50° + i \sin 50°}{\cos 20° + i \sin 20°}$

54. $\dfrac{2(\cos 120° + i \sin 120°)}{4(\cos 40° + i \sin 40°)}$

55. $\dfrac{\cos(5\pi/3) + i \sin(5\pi/3)}{\cos \pi + i \sin \pi}$

56. $\dfrac{5(\cos 4.3 + i \sin 4.3)}{4(\cos 2.1 + i \sin 2.1)}$

57. $\dfrac{12(\cos 52° + i \sin 52°)}{3(\cos 110° + i \sin 110°)}$

In Exercises 59–66, (a) write the trigonometric forms of the complex numbers, (b) perform the indicated operation using the trigonometric forms, and (c) perform the indicated operation using the standard forms, and check your result with that of part (b).

59. $(2 + 2i)(1 - i)$

60. $(\sqrt{3} + i)(1 + i)$

61. $-2i(1 + i)$

62. $4(1 - \sqrt{3}i)$

63. $\dfrac{3 + 4i}{1 - \sqrt{3}i}$

64. $\dfrac{1 + \sqrt{3}i}{6 - 3i}$

In Exercises 71–88, use DeMoivre's Theorem to find the indicated power of the complex number. Write the result in standard form.

71. $(1 + i)^5$

72. $(2 + 2i)^6$

73. $(-1 + i)^{10}$

74. $(3 - 2i)^8$

79. $\left(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4}\right)^{12}$

80. $\left[2\left(\cos \frac{\pi}{2} + i \sin \frac{\pi}{2}\right)\right]^8$

81. $[5(\cos 3.2 + i \sin 3.2)]^4$

87. $\left[2\left(\cos \frac{\pi}{10} + i \sin \frac{\pi}{10}\right)\right]^5$

88. $\left[2\left(\cos \frac{\pi}{8} + i \sin \frac{\pi}{8}\right)\right]^6$