

Each of the following complex numbers is given in Cartesian form. Convert them into Polar form and Exponential form.

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|---|---|---|--|
| 1. $17 + 17i$                                 | 30. $-42 + 42i$                             | 58. $\frac{-49}{4} + \frac{49\sqrt{3}}{4}i$ | 87. $\frac{11}{3} + \frac{11\sqrt{3}}{3}i$   |
| 2. $\frac{-28}{9} + \frac{28}{9}i$            | 31. $32 + i32\sqrt{3}$                      | 59. $-20\sqrt{3} - 20i$                     | 88. $-2 - 2i$                                |
| 3. $-6\sqrt{3} + 6i$                          | 32. $\frac{13}{5} + \frac{13\sqrt{3}}{5}i$  | 60. $\frac{-7}{9} + \frac{7}{9}i$           | 89. $\frac{-27}{2} - \frac{27}{2}i$          |
| 4. $\frac{45}{4} + \frac{45}{4}i$             | 33. $\frac{22\sqrt{3}}{3} + \frac{22}{3}i$  | 61. $\frac{11}{6} - \frac{11\sqrt{3}}{6}i$  | 90. $\frac{-\sqrt{3}}{2} + \frac{1}{2}i$     |
| 5. $\frac{41}{4} - \frac{41\sqrt{3}}{4}i$     | 34. $\frac{8}{9} - \frac{8}{9}i$            | 62. $\frac{-15}{8} - \frac{15\sqrt{3}}{8}i$ | 91. $\frac{13\sqrt{3}}{6} - \frac{13}{6}i$   |
| 6. $-6 + 6i$                                  | 35. $\frac{7}{2} - \frac{7}{2}i$            | 63. $\frac{17}{9} + \frac{17\sqrt{3}}{9}i$  | 92. $-4 + 4i$                                |
| 7. $-41 - 41i$                                | 36. $7\sqrt{3} - 7i$                        | 64. $\frac{5}{4} + \frac{5\sqrt{3}}{4}i$    | 93. $10 + 10i$                               |
| 8. $3 + i3\sqrt{3}$                           | 37. $11 - i11\sqrt{3}$                      | 65. $\frac{49\sqrt{3}}{2} - \frac{49}{2}i$  | 94. $\frac{25}{4} - \frac{25\sqrt{3}}{4}i$   |
| 9. $\frac{-4}{3} - \frac{4\sqrt{3}}{3}i$      | 38. $\frac{-3\sqrt{3}}{10} + \frac{3}{10}i$ | 66. $\frac{-46}{3} + \frac{46}{3}i$         | 95. $\frac{23\sqrt{3}}{3} - \frac{23}{3}i$   |
| 10. $\frac{-44}{3} - \frac{44}{3}i$           | 39. $\frac{-\sqrt{3}}{10} + \frac{1}{10}i$  | 67. $\frac{-23}{9} - \frac{23}{9}i$         | 96. $-8\sqrt{3} - 8i$                        |
| 11. $15 + i15\sqrt{3}$                        | 40. $\frac{-5}{9} + \frac{5}{9}i$           | 68. $\frac{-25\sqrt{3}}{7} - \frac{25}{7}i$ | 97. $\frac{2}{3} + \frac{2\sqrt{3}}{3}i$     |
| 12. $\frac{7}{5} + \frac{7\sqrt{3}}{5}i$      | 41. $\frac{-40\sqrt{3}}{9} - \frac{40}{9}i$ | 69. $\frac{43}{2} - \frac{43}{2}i$          | 98. $\frac{18}{5} + \frac{18}{5}i$           |
| 13. $\frac{49}{8} - \frac{49}{8}i$            | 42. $\frac{-13\sqrt{3}}{2} - \frac{13}{2}i$ | 70. $\frac{17}{7} - \frac{17\sqrt{3}}{7}i$  | 99. $14 - 14i$                               |
| 14. $\frac{49\sqrt{3}}{5} + \frac{49}{5}i$    | 43. $\frac{\sqrt{3}}{3} + \frac{1}{3}i$     | 71. $32 + 32i$                              | 100. $\frac{-39}{2} - \frac{39}{2}i$         |
| 15. $-50 + i50\sqrt{3}$                       | 44. $\frac{-11}{3} + \frac{11\sqrt{3}}{3}i$ | 72. $4 - 4i$                                | 101. $\frac{26\sqrt{3}}{3} - \frac{26}{3}i$  |
| 16. $\frac{17\sqrt{3}}{3} + \frac{17}{3}i$    | 45. $-15 - i15\sqrt{3}$                     | 73. $\frac{-38\sqrt{3}}{9} - \frac{38}{9}i$ | 102. $\frac{-41}{7} + \frac{41\sqrt{3}}{7}i$ |
| 17. $\frac{-20}{3} + \frac{20}{3}i$           | 46. $26\sqrt{3} - 26i$                      | 74. $\frac{44}{9} + \frac{44\sqrt{3}}{9}i$  | 103. $-34 - 34i$                             |
| 18. $\frac{-49}{10} - \frac{49\sqrt{3}}{10}i$ | 47. $\frac{35}{4} - \frac{35}{4}i$          | 75. $9\sqrt{3} + 9i$                        | 104. $\frac{8}{3} + \frac{8}{3}i$            |
| 19. $\frac{32}{9} + \frac{32}{9}i$            | 48. $\frac{37}{6} + \frac{37\sqrt{3}}{6}i$  | 76. $\frac{32\sqrt{3}}{9} + \frac{32}{9}i$  | 105. $\frac{-9\sqrt{3}}{5} + \frac{9}{5}i$   |
| 20. $\frac{7\sqrt{3}}{5} - \frac{7}{5}i$      | 49. $2 - i2\sqrt{3}$                        | 77. $\frac{11\sqrt{3}}{5} + \frac{11}{5}i$  | 106. $\frac{-16\sqrt{3}}{3} + \frac{16}{3}i$ |
| 21. $\frac{-13\sqrt{3}}{2} + \frac{13}{2}i$   | 50. $\frac{-46}{5} - \frac{46\sqrt{3}}{5}i$ | 78. $\frac{15\sqrt{3}}{8} + \frac{15}{8}i$  | 107. $\frac{-43}{7} + \frac{43\sqrt{3}}{7}i$ |
| 22. $-4\sqrt{3} - 4i$                         | 51. $\frac{7\sqrt{3}}{6} + \frac{7}{6}i$    | 79. $\frac{50\sqrt{3}}{7} + \frac{50}{7}i$  | 108. $\frac{23}{3} + \frac{23}{3}i$          |
| 23. $\frac{19}{5} - \frac{19}{5}i$            | 52. $\frac{-20\sqrt{3}}{7} + \frac{20}{7}i$ | 80. $\frac{-15\sqrt{3}}{4} - \frac{15}{4}i$ | 109. $\frac{21}{10} - \frac{21}{10}i$        |
| 24. $-21 - i21\sqrt{3}$                       | 53. $\frac{-9}{4} - \frac{9\sqrt{3}}{4}i$   | 81. $\frac{-5}{9} - \frac{5}{9}i$           | 110. $-13 - i13\sqrt{3}$                     |
| 25. $\frac{-17\sqrt{3}}{10} + \frac{17}{10}i$ | 54. $\frac{-5}{4} - \frac{5\sqrt{3}}{4}i$   | 82. $\frac{-16\sqrt{3}}{9} + \frac{16}{9}i$ | 111. $\frac{-35\sqrt{3}}{2} - \frac{35}{2}i$ |
| 26. $\frac{-8}{5} + \frac{8}{5}i$             | 55. $\frac{-13}{2} + \frac{13\sqrt{3}}{2}i$ | 83. $3\sqrt{3} + 3i$                        | 112. $-38 + i38\sqrt{3}$                     |
| 27. $14 + i14\sqrt{3}$                        | 56. $\frac{30\sqrt{3}}{7} + \frac{30}{7}i$  | 84. $\frac{-23}{9} + \frac{23\sqrt{3}}{9}i$ | 113. $\frac{-49\sqrt{3}}{6} + \frac{49}{6}i$ |
| 28. $-26 + i26\sqrt{3}$                       | 57. $-41\sqrt{3} + 41i$                     | 85. $\frac{50}{3} - \frac{50}{3}i$          | 114. $\frac{10}{3} - \frac{10\sqrt{3}}{3}i$  |
| 29. $-14\sqrt{3} + 14i$                       |   | 86. $\frac{23}{4} + \frac{23}{4}i$          |  |

## Solutions:

1.  $17\sqrt{2}(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4})$  and  $17\sqrt{2}e^{\frac{\pi}{4}i}$
2.  $\frac{28\sqrt{2}}{9}(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4})$  and  $\frac{28\sqrt{2}}{9}e^{\frac{3\pi}{4}i}$
3.  $12(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $12e^{\frac{5\pi}{6}i}$
4.  $\frac{45\sqrt{2}}{4}(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4})$  and  $\frac{45\sqrt{2}}{4}e^{\frac{\pi}{4}i}$
5.  $\frac{41}{2}(\cos \frac{5\pi}{3} + i \sin \frac{5\pi}{3})$  and  $\frac{41}{2}e^{\frac{5\pi}{3}i}$
6.  $6\sqrt{2}(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4})$  and  $6\sqrt{2}e^{\frac{3\pi}{4}i}$
7.  $41\sqrt{2}(\cos \frac{5\pi}{4} + i \sin \frac{5\pi}{4})$  and  $41\sqrt{2}e^{\frac{5\pi}{4}i}$
8.  $6(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $6e^{\frac{\pi}{3}i}$
9.  $\frac{8}{3}(\cos \frac{4\pi}{3} + i \sin \frac{4\pi}{3})$  and  $\frac{8}{3}e^{\frac{4\pi}{3}i}$
10.  $\frac{44\sqrt{2}}{3}(\cos \frac{5\pi}{4} + i \sin \frac{5\pi}{4})$  and  $\frac{44\sqrt{2}}{3}e^{\frac{5\pi}{4}i}$
11.  $30(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $30e^{\frac{\pi}{3}i}$
12.  $\frac{14}{5}(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $\frac{14}{5}e^{\frac{\pi}{3}i}$
13.  $\frac{49\sqrt{2}}{8}(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4})$  and  $\frac{49\sqrt{2}}{8}e^{\frac{7\pi}{4}i}$
14.  $\frac{98}{5}(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $\frac{98}{5}e^{\frac{\pi}{6}i}$
15.  $100(\cos \frac{2\pi}{3} + i \sin \frac{2\pi}{3})$  and  $100e^{\frac{2\pi}{3}i}$
16.  $\frac{34}{3}(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $\frac{34}{3}e^{\frac{\pi}{6}i}$
17.  $\frac{20\sqrt{2}}{3}(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4})$  and  $\frac{20\sqrt{2}}{3}e^{\frac{3\pi}{4}i}$
18.  $\frac{49}{5}(\cos \frac{4\pi}{3} + i \sin \frac{4\pi}{3})$  and  $\frac{49}{5}e^{\frac{4\pi}{3}i}$
19.  $\frac{32\sqrt{2}}{9}(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4})$  and  $\frac{32\sqrt{2}}{9}e^{\frac{\pi}{4}i}$
20.  $\frac{14}{5}(\cos \frac{11\pi}{6} + i \sin \frac{11\pi}{6})$  and  $\frac{14}{5}e^{\frac{11\pi}{6}i}$
21.  $13(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $13e^{\frac{5\pi}{6}i}$
22.  $8(\cos \frac{7\pi}{6} + i \sin \frac{7\pi}{6})$  and  $8e^{\frac{7\pi}{6}i}$
23.  $\frac{19\sqrt{2}}{5}(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4})$  and  $\frac{19\sqrt{2}}{5}e^{\frac{7\pi}{4}i}$
24.  $42(\cos \frac{4\pi}{3} + i \sin \frac{4\pi}{3})$  and  $42e^{\frac{4\pi}{3}i}$
25.  $\frac{17}{5}(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $\frac{17}{5}e^{\frac{5\pi}{6}i}$
26.  $\frac{8\sqrt{2}}{5}(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4})$  and  $\frac{8\sqrt{2}}{5}e^{\frac{3\pi}{4}i}$
27.  $28(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $28e^{\frac{\pi}{3}i}$
28.  $52(\cos \frac{2\pi}{3} + i \sin \frac{2\pi}{3})$  and  $52e^{\frac{2\pi}{3}i}$
29.  $28(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $28e^{\frac{5\pi}{6}i}$
30.  $42\sqrt{2}(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4})$  and  $42\sqrt{2}e^{\frac{3\pi}{4}i}$
31.  $64(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $64e^{\frac{\pi}{3}i}$
32.  $\frac{26}{5}(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $\frac{26}{5}e^{\frac{\pi}{3}i}$
33.  $\frac{44}{3}(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $\frac{44}{3}e^{\frac{\pi}{6}i}$
34.  $\frac{8\sqrt{2}}{9}(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4})$  and  $\frac{8\sqrt{2}}{9}e^{\frac{7\pi}{4}i}$
35.  $\frac{7\sqrt{2}}{2}(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4})$  and  $\frac{7\sqrt{2}}{2}e^{\frac{7\pi}{4}i}$
36.  $14(\cos \frac{11\pi}{6} + i \sin \frac{11\pi}{6})$  and  $14e^{\frac{11\pi}{6}i}$
37.  $22(\cos \frac{5\pi}{3} + i \sin \frac{5\pi}{3})$  and  $22e^{\frac{5\pi}{3}i}$
38.  $\frac{3}{5}(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $\frac{3}{5}e^{\frac{5\pi}{6}i}$
39.  $\frac{1}{5}(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $\frac{1}{5}e^{\frac{5\pi}{6}i}$
40.  $\frac{5\sqrt{2}}{9}(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4})$  and  $\frac{5\sqrt{2}}{9}e^{\frac{3\pi}{4}i}$
41.  $\frac{80}{9}(\cos \frac{7\pi}{6} + i \sin \frac{7\pi}{6})$  and  $\frac{80}{9}e^{\frac{7\pi}{6}i}$
42.  $13(\cos \frac{7\pi}{6} + i \sin \frac{7\pi}{6})$  and  $13e^{\frac{7\pi}{6}i}$
43.  $\frac{2}{3}(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $\frac{2}{3}e^{\frac{\pi}{6}i}$
44.  $\frac{22}{3}(\cos \frac{2\pi}{3} + i \sin \frac{2\pi}{3})$  and  $\frac{22}{3}e^{\frac{2\pi}{3}i}$
45.  $30(\cos \frac{4\pi}{3} + i \sin \frac{4\pi}{3})$  and  $30e^{\frac{4\pi}{3}i}$
46.  $52(\cos \frac{11\pi}{6} + i \sin \frac{11\pi}{6})$  and  $52e^{\frac{11\pi}{6}i}$
47.  $\frac{35\sqrt{2}}{4}(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4})$  and  $\frac{35\sqrt{2}}{4}e^{\frac{7\pi}{4}i}$
48.  $\frac{37}{3}(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $\frac{37}{3}e^{\frac{\pi}{3}i}$
49.  $4(\cos \frac{5\pi}{3} + i \sin \frac{5\pi}{3})$  and  $4e^{\frac{5\pi}{3}i}$
50.  $\frac{92}{5}(\cos \frac{4\pi}{3} + i \sin \frac{4\pi}{3})$  and  $\frac{92}{5}e^{\frac{4\pi}{3}i}$
51.  $\frac{7}{3}(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $\frac{7}{3}e^{\frac{\pi}{6}i}$
52.  $\frac{40}{7}(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $\frac{40}{7}e^{\frac{5\pi}{6}i}$
53.  $\frac{9}{2}(\cos \frac{4\pi}{3} + i \sin \frac{4\pi}{3})$  and  $\frac{9}{2}e^{\frac{4\pi}{3}i}$
54.  $\frac{5}{2}(\cos \frac{4\pi}{3} + i \sin \frac{4\pi}{3})$  and  $\frac{5}{2}e^{\frac{4\pi}{3}i}$
55.  $13(\cos \frac{2\pi}{3} + i \sin \frac{2\pi}{3})$  and  $13e^{\frac{2\pi}{3}i}$
56.  $\frac{60}{7}(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $\frac{60}{7}e^{\frac{\pi}{6}i}$
57.  $82(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $82e^{\frac{5\pi}{6}i}$
58.  $\frac{49}{2}(\cos \frac{2\pi}{3} + i \sin \frac{2\pi}{3})$  and  $\frac{49}{2}e^{\frac{2\pi}{3}i}$
59.  $40(\cos \frac{7\pi}{6} + i \sin \frac{7\pi}{6})$  and  $40e^{\frac{7\pi}{6}i}$
60.  $\frac{7\sqrt{2}}{9}(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4})$  and  $\frac{7\sqrt{2}}{9}e^{\frac{3\pi}{4}i}$
61.  $\frac{11}{3}(\cos \frac{5\pi}{3} + i \sin \frac{5\pi}{3})$  and  $\frac{11}{3}e^{\frac{5\pi}{3}i}$
62.  $\frac{15}{4}(\cos \frac{4\pi}{3} + i \sin \frac{4\pi}{3})$  and  $\frac{15}{4}e^{\frac{4\pi}{3}i}$
63.  $\frac{34}{9}(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $\frac{34}{9}e^{\frac{\pi}{3}i}$
64.  $\frac{5}{2}(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $\frac{5}{2}e^{\frac{\pi}{3}i}$
65.  $49(\cos \frac{11\pi}{6} + i \sin \frac{11\pi}{6})$  and  $49e^{\frac{11\pi}{6}i}$
66.  $\frac{46\sqrt{2}}{3}(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4})$  and  $\frac{46\sqrt{2}}{3}e^{\frac{3\pi}{4}i}$
67.  $\frac{23\sqrt{2}}{9}(\cos \frac{5\pi}{4} + i \sin \frac{5\pi}{4})$  and  $\frac{23\sqrt{2}}{9}e^{\frac{5\pi}{4}i}$
68.  $\frac{50}{7}(\cos \frac{7\pi}{6} + i \sin \frac{7\pi}{6})$  and  $\frac{50}{7}e^{\frac{7\pi}{6}i}$
69.  $\frac{43\sqrt{2}}{2}(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4})$  and  $\frac{43\sqrt{2}}{2}e^{\frac{7\pi}{4}i}$
70.  $\frac{34}{7}(\cos \frac{5\pi}{3} + i \sin \frac{5\pi}{3})$  and  $\frac{34}{7}e^{\frac{5\pi}{3}i}$
71.  $32\sqrt{2}(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4})$  and  $32\sqrt{2}e^{\frac{\pi}{4}i}$
72.  $4\sqrt{2}(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4})$  and  $4\sqrt{2}e^{\frac{7\pi}{4}i}$
73.  $\frac{76}{9}(\cos \frac{7\pi}{6} + i \sin \frac{7\pi}{6})$  and  $\frac{76}{9}e^{\frac{7\pi}{6}i}$
74.  $\frac{88}{9}(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $\frac{88}{9}e^{\frac{\pi}{3}i}$
75.  $18(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $18e^{\frac{\pi}{6}i}$
76.  $\frac{64}{9}(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $\frac{64}{9}e^{\frac{\pi}{6}i}$
77.  $\frac{22}{5}(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $\frac{22}{5}e^{\frac{\pi}{6}i}$
78.  $\frac{15}{4}(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $\frac{15}{4}e^{\frac{\pi}{6}i}$
79.  $\frac{100}{7}(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $\frac{100}{7}e^{\frac{\pi}{6}i}$
80.  $\frac{15}{2}(\cos \frac{7\pi}{6} + i \sin \frac{7\pi}{6})$  and  $\frac{15}{2}e^{\frac{7\pi}{6}i}$
81.  $\frac{5\sqrt{2}}{9}(\cos \frac{5\pi}{4} + i \sin \frac{5\pi}{4})$  and  $\frac{5\sqrt{2}}{9}e^{\frac{5\pi}{4}i}$
82.  $\frac{32}{9}(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $\frac{32}{9}e^{\frac{5\pi}{6}i}$
83.  $6(\cos \frac{\pi}{6} + i \sin \frac{\pi}{6})$  and  $6e^{\frac{\pi}{6}i}$
84.  $\frac{46}{9}(\cos \frac{2\pi}{3} + i \sin \frac{2\pi}{3})$  and  $\frac{46}{9}e^{\frac{2\pi}{3}i}$
85.  $\frac{50\sqrt{2}}{3}(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4})$  and  $\frac{50\sqrt{2}}{3}e^{\frac{7\pi}{4}i}$
86.  $\frac{23\sqrt{2}}{4}(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4})$  and  $\frac{23\sqrt{2}}{4}e^{\frac{\pi}{4}i}$
87.  $\frac{22}{3}(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $\frac{22}{3}e^{\frac{\pi}{3}i}$
88.  $2\sqrt{2}(\cos \frac{5\pi}{4} + i \sin \frac{5\pi}{4})$  and  $2\sqrt{2}e^{\frac{5\pi}{4}i}$
89.  $\frac{27\sqrt{2}}{2}(\cos \frac{5\pi}{4} + i \sin \frac{5\pi}{4})$  and  $\frac{27\sqrt{2}}{2}e^{\frac{5\pi}{4}i}$
90.  $1(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $1e^{\frac{5\pi}{6}i}$
91.  $\frac{13}{3}(\cos \frac{11\pi}{6} + i \sin \frac{11\pi}{6})$  and  $\frac{13}{3}e^{\frac{11\pi}{6}i}$
92.  $4\sqrt{2}(\cos \frac{3\pi}{4} + i \sin \frac{3\pi}{4})$  and  $4\sqrt{2}e^{\frac{3\pi}{4}i}$
93.  $10\sqrt{2}(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4})$  and  $10\sqrt{2}e^{\frac{\pi}{4}i}$
94.  $\frac{25}{2}(\cos \frac{5\pi}{3} + i \sin \frac{5\pi}{3})$  and  $\frac{25}{2}e^{\frac{5\pi}{3}i}$
95.  $\frac{46}{3}(\cos \frac{11\pi}{6} + i \sin \frac{11\pi}{6})$  and  $\frac{46}{3}e^{\frac{11\pi}{6}i}$
96.  $16(\cos \frac{7\pi}{6} + i \sin \frac{7\pi}{6})$  and  $16e^{\frac{7\pi}{6}i}$
97.  $\frac{4}{3}(\cos \frac{\pi}{3} + i \sin \frac{\pi}{3})$  and  $\frac{4}{3}e^{\frac{\pi}{3}i}$
98.  $\frac{18\sqrt{2}}{5}(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4})$  and  $\frac{18\sqrt{2}}{5}e^{\frac{\pi}{4}i}$
99.  $14\sqrt{2}(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4})$  and  $14\sqrt{2}e^{\frac{7\pi}{4}i}$
100.  $\frac{39\sqrt{2}}{2}(\cos \frac{5\pi}{4} + i \sin \frac{5\pi}{4})$  and  $\frac{39\sqrt{2}}{2}e^{\frac{5\pi}{4}i}$
101.  $\frac{52}{3}(\cos \frac{11\pi}{6} + i \sin \frac{11\pi}{6})$  and  $\frac{52}{3}e^{\frac{11\pi}{6}i}$
102.  $\frac{82}{7}(\cos \frac{2\pi}{3} + i \sin \frac{2\pi}{3})$  and  $\frac{82}{7}e^{\frac{2\pi}{3}i}$
103.  $34\sqrt{2}(\cos \frac{5\pi}{4} + i \sin \frac{5\pi}{4})$  and  $34\sqrt{2}e^{\frac{5\pi}{4}i}$
104.  $\frac{8\sqrt{2}}{3}(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4})$  and  $\frac{8\sqrt{2}}{3}e^{\frac{\pi}{4}i}$
105.  $\frac{18}{5}(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $\frac{18}{5}e^{\frac{5\pi}{6}i}$
106.  $\frac{32}{3}(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $\frac{32}{3}e^{\frac{5\pi}{6}i}$
107.  $\frac{86}{7}(\cos \frac{2\pi}{3} + i \sin \frac{2\pi}{3})$  and  $\frac{86}{7}e^{\frac{2\pi}{3}i}$
108.  $\frac{23\sqrt{2}}{3}(\cos \frac{\pi}{4} + i \sin \frac{\pi}{4})$  and  $\frac{23\sqrt{2}}{3}e^{\frac{\pi}{4}i}$
109.  $\frac{21\sqrt{2}}{10}(\cos \frac{7\pi}{4} + i \sin \frac{7\pi}{4})$  and  $\frac{21\sqrt{2}}{10}e^{\frac{7\pi}{4}i}$
110.  $26(\cos \frac{4\pi}{3} + i \sin \frac{4\pi}{3})$  and  $26e^{\frac{4\pi}{3}i}$
111.  $35(\cos \frac{7\pi}{6} + i \sin \frac{7\pi}{6})$  and  $35e^{\frac{7\pi}{6}i}$
112.  $76(\cos \frac{2\pi}{3} + i \sin \frac{2\pi}{3})$  and  $76e^{\frac{2\pi}{3}i}$
113.  $\frac{49}{3}(\cos \frac{5\pi}{6} + i \sin \frac{5\pi}{6})$  and  $\frac{49}{3}e^{\frac{5\pi}{6}i}$
114.  $\frac{20}{3}(\cos \frac{5\pi}{3} + i \sin \frac{5\pi}{3})$  and  $\frac{20}{3}e^{\frac{5\pi}{3}i}$