In Exercises 1-4 express the complex numbers in simplified Cartesian form.

1. $\left(\frac{3}{5} + \frac{4}{5}i\right)^{39} \left(\frac{3}{5}i + \frac{4}{5}\right)^{39}$

2. $\dfrac{\left(9e^{\frac{\pi i}{9}}\right)\left(8e^{-\frac{5\pi i}{18}}\right)}{\left(6e^{-\frac{\pi i}{3}}\right)^{2}}$

3. $\left[2\left(\cos\frac{3\pi}{7}\right) + 2\left(\sin\frac{3\pi}{7}\right)i\right]^{7}$

4. $\left(i - \sqrt{3}\right)^{10}$

In Exercises 5-6 find all solutions of the equation.

5. $z^4 + 4z^2 + 16 = 0$

6. $z^6 - 7z^3 = 8$