

Homework — Complex Numbers

9.7 Perform the indicated operations both algebraically and graphically.

(a) $(3 + 2i) + (2 + 3i)$ (c) $(4 - 3i) - (-2 + i)$

2. Draw in the complex plane:

- (a) all complex numbers with real part > 3
- (b) all complex numbers with real part < 1
- (c) all complex numbers with imaginary part > 1
- (d) all complex numbers with imaginary part < 1
- (e) all complex numbers with absolute value > 3
- (f) all complex numbers with absolute value < 1

3. Draw in the complex plane:

- (a) all solutions to the equation $x^4=1$
- (b) all solutions to the equation $x^6=1$

9.6 Express each of the following in terms of i .

(a) $2\sqrt{-49}$

(d) $4\sqrt{-1/8}$

(g) $\frac{-4 + \sqrt{-4}}{2}$

Find all of the roots (real and imaginary) to the following quadratic equations.

26. $2x^2 - 2x + 5 = 0$

27. $0.2y^2 = -3y + 0.5$

28. $3r^2 + 3(r + 5) = 2 - r$