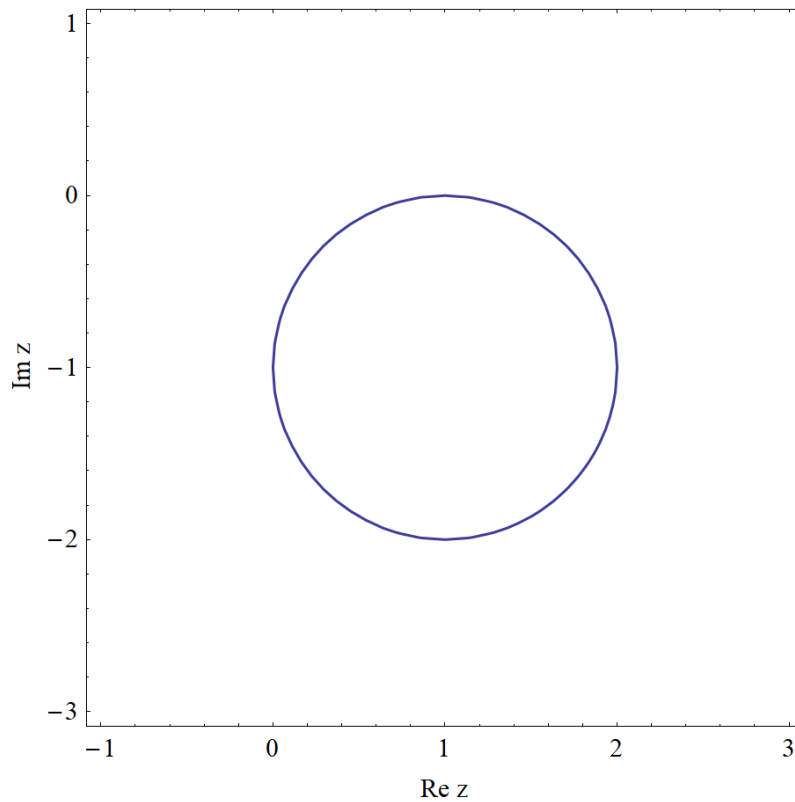## Exercise 5

In each case, sketch the set of points determined by the given condition:

$$(a)\ |z - 1 + i| = 1; \qquad (b)\ |z + i| \leq 3; \qquad (c)\ |z - 4i| \geq 4.$$
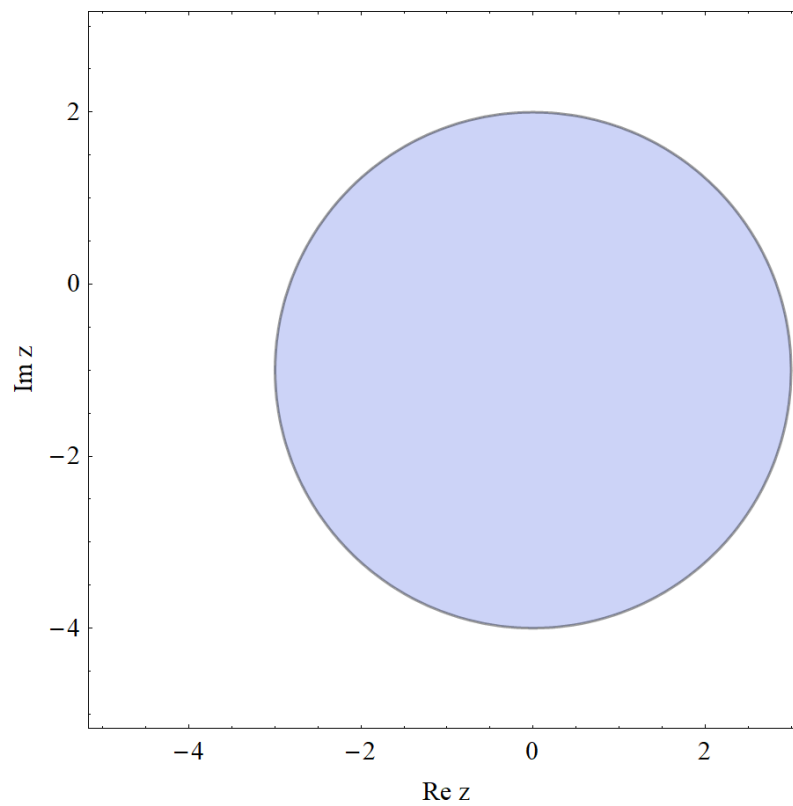
Solution

Part (a)

$|z - 1 + i| = 1$ represents all points on the circle centered at $z = 1 - i$ with radius 1 in the complex plane.

Part (b)

$|z + i| \leq 3$ represents all points on and within the disk centered at $z = -i$ with radius 3 in the complex plane.

Part (c)

$|z - 4i| \geq 4$ represents all points on and outside the disk centered at $z = 4i$ with radius 4 in the complex plane.