

## Exercise 5

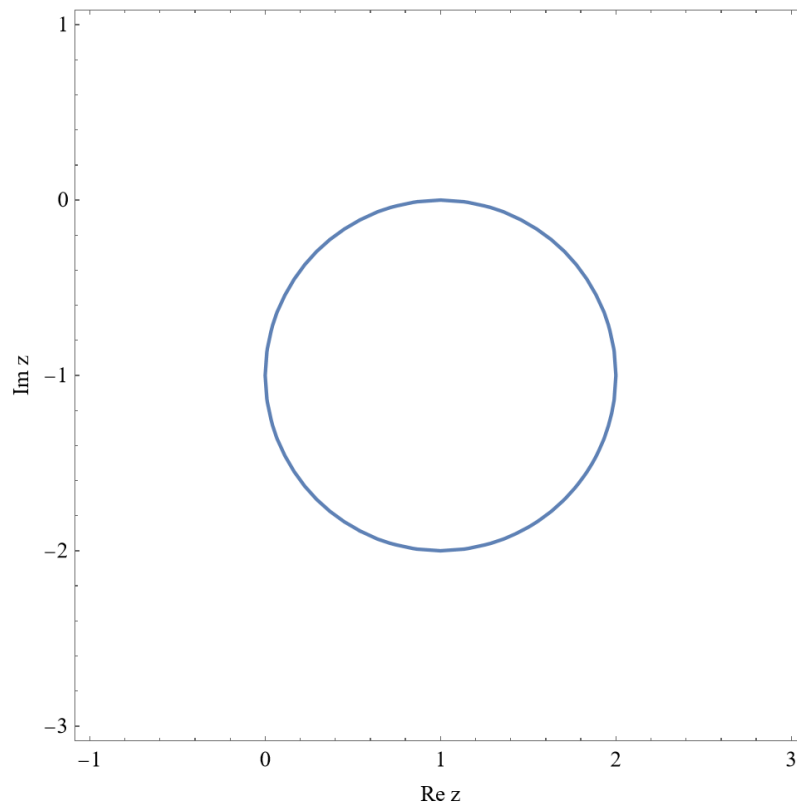
In each case, sketch the set of points determined by the given condition:

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

### Solution

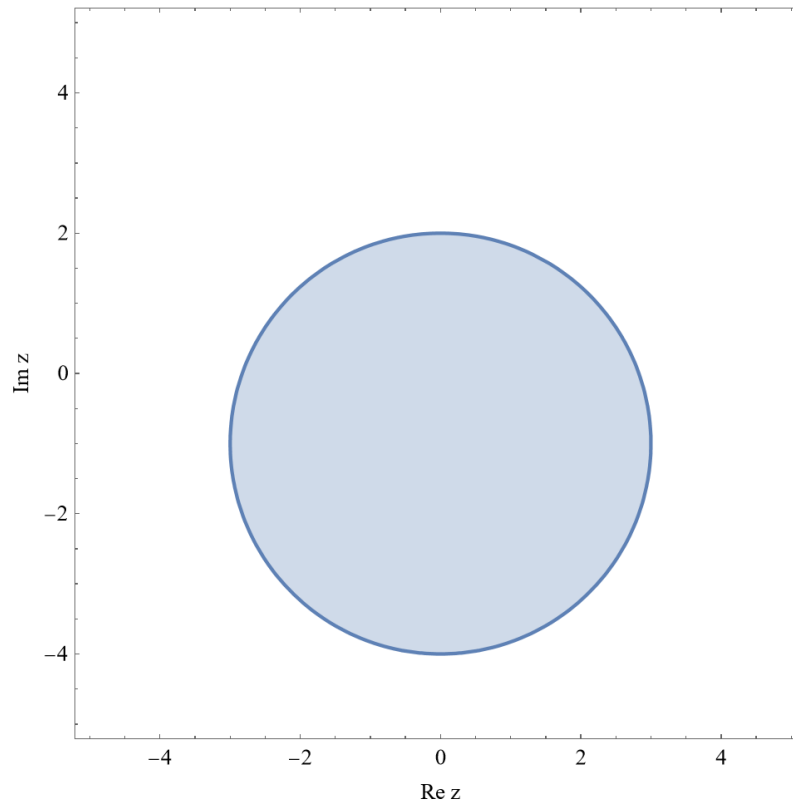
#### Part (a)

$|z - 1 + i| = 1$  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.

