

Reading as noted below. Problems are due Friday, September 8 at 4 p.m. in my box outside Galileo 104.

### Reading

- For Tuesday 9/5: Please read *carefully* through to the end of chapter 1 of Townsend, including the summary §1.6. Bring questions to class.
- For Thursday 9/7: §2.1 – 2.2.

### Problems

1. Complex numbers practice:

$$z_1 = -1 + \sqrt{3}i$$

$$z_2 = 2e^{i\pi/4}$$

- (a) Write  $z_1$  in polar form and  $z_2$  in cartesian ( $x + iy$ ) form.
  - (b) Compute  $w = z_1 + z_2$  and sketch  $w$ ,  $z_1$ , and  $z_2$  in the complex plane.
  - (c) Compute  $z_1^*$  and  $z_1^* z_1$ .
  - (d) Sketch in the complex plane:  $z_2$ ,  $e^{i\pi/4} z_2$ , and  $e^{i\pi/2} z_2$ .
2. Townsend problems 1.3-1.9, 1.14-1.15 (nine problems total)