

Math 295 - Fall 2020  
Warm up 5.2  
Due before class on Wednesday October 7

Please turn in this assignment on Gradescope.

**Problem 1 : (Objective C7)** List all of the values that each of the following expressions can take:

- a)  $\log(1)$
- b)  $\log(-1)$
- c)  $\log(4i)$
- d)  $\log(1 + i)$

**Problem 2 : (Objective C7)** Give the value of the principal logarithm of each number:

- a)  $\text{Log}(1)$
- b)  $\text{Log}(-1)$
- c)  $\text{Log}(4i)$
- d)  $\text{Log}(1 + i)$

**Problem 3 : (Objective C6, C8)** Are  $\exp(z)$  and  $e^z$  the same or different? You can read the discussion starting at the very bottom of page 47 of BMPS to inform your answer.

**Problem 4 : (Objective C6, C8)**

- a) What are the solutions of  $z^2 = i$ ? Answer in cartesian coordinates (not polar coordinates).
- b) What is the value of  $i^{1/2} = \sqrt{i}$  according to Bowman Section 3.6 (page 11).
- c) What about according to BMPS Section 3.5 (page 47)?
- d) Are the two definitions the same or different?