

**MA/PHY507 Spring 2019**  
**Problem Set 2**  
**DUE: Monday, 28 January 2019**

Read Arfken, chapter 11, sections 11.1–11.3

1. Compute the complex number  $(1+i)^{(2-i)}$  with the principal branch of the logarithm. Clearly write the real and imaginary parts.
2. Find the polar form of  $(2-3i)^4$ . Clearly write the real and imaginary parts.
3. Solve  $\sin z = \frac{\sqrt{2}}{2}$  for  $z$ . Make sure you verify your result by solving the appropriate equations.
4. Arfken, section 11.2, problems 11.2.1, 11.2.3, 11.2.9 (parts b) and f)).