

**HW #1**  
**ME104**  
**Due Friday 10/2 at 5pm**  
*(in box outside of CAD Lab)*

**Problems from Text:**

2.3, 2.8, 2.10, 2.27, 2.29

Prob. 5. Using the Taylor series for  $e^x$ , show that  $e^{j\theta} = \cos \theta + j \sin \theta$  (Euler's formula, pronounced "oiler's")

Prob. 6. Solve the following equation for  $r$  and  $\theta$  :

$$re^{j\theta} = 1 - 2j$$

Prob. 7. Solve for  $x$  and  $y$ :

$$(1 + 2j)^{-1} = x + jy$$