Complex Numbers Homework (#5), Rev 1.
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1. Calculate the sum $(4 + 3j) + (3 + 4j)$. Convert to polar form.

2a. Calculate the product, $(4 + 3j)(3 + 4j)$. Do this in rectangular form.
2b. Convert both numbers to polar form and compute the product. Do your answers agree?

Write the following in rectangular form.

3. $100\sqrt{2}\angle{-\pi/4}$.
4. $e^{4+j3\pi/4}$.
5. $e^{j282\pi}$
6. j^{2017}.

Write the following in polar form.

7. $\sqrt{2j}$.
8. $85\,\text{Volts} + j14\,\text{Volts}$.
9. $(3 + 4j)\,e^{-j/2}$.
10. $j(3 - 6j)$.

Compute the complex conjugate in the same form as the given expression.

11. $17\angle{\pi/12}$
12. $4 - 3j$
13. $36e^{j3\pi/4}$

14. In Matlab, generate a time axis; `[tax=[0:0.2:10]*1e-6;`, which represents time in seconds. Then generate the complex variable, V_0 with an amplitude of 10 Volts and a phase of 30 degrees.
Next, compute the function of time,

$$V = V_0 e^{j2\pi ft}$$

, where $F = 1\,\text{Mhz}$, and t is the time axis, `tax`.
14a. Plot the real and imaginary parts.
14b. Plot $V + V^*$.
14c. Repeat 14b after changing the phase of V_0 to 60 degrees.