Problems to check your understanding:

1. Put the following system of equations into an augmented matrix form, and solve it by doing Gauss-Jordan Elimination to simplify it all the way to reduced row echelon form.
Write out all of the details on paper and bring it to class last week. Make it neat enough so you don't have to redo it in order for us to analyze the process.

System of equations:	The reduced row echelon form you should get as your answer:
$2x+2y+4z+10w=16$ $-x+2z+5w=1$ $2x+y+3z+9w=13$ $-3x-y+z+6w=-4$	$\left[\begin{array}{cccc\|c} 1 & 0 & 0 & 0 & 2 \\ 0 & 1 & 0 & 0 & 3 \\ 0 & 0 & 1 & 0 & -1 \\ 0 & 0 & 0 & 1 & 1 \end{array}\right]$

2. Find the determinant of this matrix by expanding along a row or column of your choice.

$$\begin{bmatrix} 1 & 2 & 3 & 4 \\ 1 & -1 & 1 & -1 \\ 2 & 1 & 1 & 1 \\ 1 & 3 & 3 & 1 \end{bmatrix}$$

Write out all of the details on paper and bring it to class last week. Make it neat enough so you don't have to redo it in order for us to analyze the process.

3. These problems do not have to be turned in, so you may choose whether to actually do them or not. The answers are at the bottom of the page.

a. Write $3-3i$ in exponential form

b. Write $2e^{4\pi/3}$ in rectangular form.

c. Find the following product. Leave your answer in exponential form: $\left(2e^{\pi/6}\right)\left(3e^{2\pi/3}\right)$

4. These problems don't have to be turned in either. Answers at the bottom.
For each problem, compute and leave your answer in rectangular form:

a. $(3-2i)+(1+6i)$

b. $(2-4i)-(3-2i)$

c. $(2+3i)(4-i)$

d. $\dfrac{2+3i}{4-i}$

Answers:

2. -38 3.a. $3\sqrt{2}\,e^{7\pi/4}$ b. $-1-\sqrt{3}\,i$ c. $6e^{5\pi/6}$

4.a. $4+4i$ b. $-1-2i$ c. $11+10i$ d. $\dfrac{5+14i}{17}$