Mathematics of Digital Signal Processing (cont'd)

Lab Exercise 12:

1. Find the equivalent polar and exponential forms of the below complex numbers:

- 5 + 2j
- 5 – 2j
- 6 + 4j
- 5 – 5j
- 2 + 3j

Mathematics of Digital Signal Processing (cont'd)

2. Find the equivalent rectangular form of the below complex numbers:

- $2e^{\frac{\pi}{3}j}$
- $-4e^{\frac{\pi}{6}j}$
- $5\left(\cos\frac{\pi}{3}+j\sin\frac{\pi}{3}\right)$
- $2\left(\cos\frac{\pi}{4}+j\sin\frac{\pi}{4}\right)$

3. For the two complex numbers given below, find the equivalent polar and exponential forms. Then, calculate $z_1 z_2$ and $\frac{z_1}{z_2}$ for each of the 3 forms and show that they are equal.

- $z_1 = 2 + 3j$ and $z_2 = -1 + 4j$