EE331 — Homework #1 / Due Wednesday, Jan. 22, 2020 **at the beginning of class**

1. Read the syllabus, rules, and info `http://www.eecs.wsu.edu/~shira/ee331/syllabus.html` on our class web page thoroughly including the official syllabus via the link given. Download the contract form from the homework page which says "I have read and understand the syllabus, rules, and info for EE 331." **Print your name, sign and date the form, and turn it in with your homework. This problem will be graded.**

2. (a) Find the Taylor series approximation for e^{-x} expanded about zero using the first four non-zero terms. (b) Find the integral of e^{-x} for limits of integration 0 to 0.5. (c) Find the integral of the Taylor series approximation you found in part (a) for the same limits of integration. (d) What do you think is the point of this problem (I'm open to answers; I'm just hoping you think about it a bit)?

3. (a) Use Euler's rule to show:
$$\sin(x) = \frac{e^{jx} - e^{-jx}}{j2}.$$
(b) Find the polar form of the complex number $z = 4 - j3$. (c) Simplify the following, showing your work $\dfrac{1 - j2}{2 - j}$.

4. (a) Convert $V(z,t) = 5\cos(5t - kz + 0.2\pi)$ to phasor form. (b) Convert $V_s(z) = 10e^{-(2-j3)z+j0.3\pi}$ to instantaneous (time) form.