Complex Exponentials:

1. Simplify the following expressions. Give your answers both in polar and in rectangular form.

   a) \( c = 3e^{j\pi/4} + 4e^{-j\pi/2} \)
   
   b) \( c = (-1 + 2j)^5 \)
   
   c) \( c = 2e^{j\pi/2} - 3e^{j\pi/3} \)

2. Use phasor addition to put the following into the form of \( x(t) = A \cos(\omega t + \theta) \)

   a) \( x(t) = \sin(4t) + 0.5\cos(4t) \)
   
   b) \( x(t) = 60\sin(120\pi t) + 120\cos(120\pi t - 20^\circ) \)