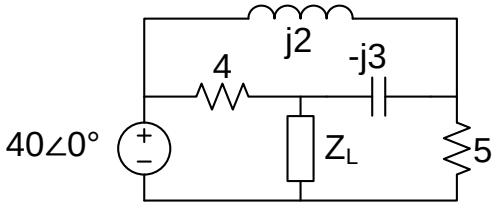
P1 **Concept:** Maximum Average Power Transfer
Find: In the circuit below find
a) load impedance Z_L for maximum average power transfer to Z_L
b) maximum average power P absorbed by Z_L
Hints: • Could use a few different methods for part b; try using nodal analysis
• first digit of real and imaginary parts of Z both 8. First digit of P is 2



P2 **Concept:** Root Mean Square
Find: Find V_{RMS} of v(t) given below.
Hints: • It is NOT SSS so can't use $V_{RMS} = V_M/\sqrt{2}$ shortcut
• Looks like a scaled cos wave plus a constant
• Know $cos^2(x) = \frac{1}{2} + \frac{1}{2}\cos(2x)$
• You should have a rough "gut" feeling of what the equivalent DC would have to be to generate same power…roughly 2 or $3V_{RMS}$
• Don't forget: units are not V but V_{RMS}