

1. (50) $v(t) = 83 \cos(32t - 97^\circ)$ V. Find frequency in Hz, frequency in radians per second, period, maximum voltage, minimum voltage, peak-to-peak voltage, RMS voltage, average voltage, voltage expressed as a phasor, and voltage at $t=5$ ms. How much average power will be consumed by a 12Ω resistor connected across this voltage?
2. (5) Convert $-5 + j12$ to polar form.
3. (5) Convert $7e^{j0.4\pi}$ to rectangular form.
4. (20) Simplify. Give your answer in rectangular form.
 $(6/19^\circ)(40 + j51)/[(2 - j7)(5/-147^\circ)]$
5. (20) Simplify. Give your answer in polar form.
 $(12 - j5)/(3/106^\circ) - (250/19^\circ)/(127 - j45)$