

ECE 209 - Final Exam (15 December 2015)

#2  $-960W, 320VAR, \text{Deliver}, 0W, 480VAR$

#3  $V_{Th} = 134.02 \angle -71.7^\circ, Z_{Th} = 1 - j13.9$

#4  $i_1(t) = 1.07 \cos(400t - 24.6^\circ) \quad v_1(t) = 22.2 \cos(400t - 27.4^\circ)$   
 $i_2(t) = 8.6 \cos(400t - 24.5^\circ) \quad v_2(t) = 2.77 \cos(400t + 177.25^\circ)$

ECE 209 - Final Exam (6 May 2015)

#1  $-693.6W, 231.2VAR, \text{Deliver}, 462.4W, 0VAR$

#2  $V_{Th} = 0, Z_{Th} = 4.3\Omega$

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#3  $i_1(t) = 0.43 \cos(400t - 24.8^\circ) \quad v_1(t) = 8.87 \cos(400t - 2.71^\circ)$   
 $i_2(t) = 3.44 \cos(400t + 114.5^\circ) \quad v_2(t) = 1.11 \cos(400t + 177.4^\circ)$

#4  $Z = 80 - j60$  (Note: Variable Resistor should be variable  $Z$ )  
 $V_{Th} = 480 + j1440 = 1518 \angle 71.6^\circ$

$Z_{Th} = 80 + j60$

maximum Power = 7201W

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#3  $Z_{AB} = 16 - j12 \quad Y_{AB} = 0.04 + j0.03$

#4  $Z_L = 20 + j20$

$P = 20W$