HOMEWORK #16 answers

1. a) $\frac{251}{325} - j\frac{207}{325}$

   b) $\sqrt{2} - j\sqrt{2}$

   c) $6\sqrt{2}\cos(40°)\cos(9t + 45°)$

   d) $\frac{1}{17}$

   e) –10

2. L

3. $L = 9$ mH

4. Draw circuit diagram with following values:
   phasor $\mathbf{I}_s = 7\angle 30°$ A, $-j1250$ Ω (C), $j40$ Ω (L), 30 Ω (R), current arrow labeled $\mathbf{I}_x$, dependent source labeled $15\mathbf{I}_x$.

5. $\mathbf{V}_{Th} = 21\sqrt{73}\angle 46.3°$ V $\approx 124 + j129.7$ V
   $z_{Th} = 3\sqrt{73}\angle 16.3°$ Ω $= 24.6 + j7.2$ Ω