Opti 501 **Solutions**

1-7) For all integer values of *n* we have: $i = \exp[i(2n\pi + \pi/2)]$. Therefore,

$$i^i = \left\{\exp[i(2n\pi + \pi/2)]\right\}^i = \exp[i^2(2n\pi + \pi/2)] = \exp[-(2n\pi + \pi/2)].$$

Note that i^i has an infinite number of values, all of which are real.
