

8, 9) (Weight = 2 problems) [Superposition, Thevenin, pSpice refresher]

For the circuit shown in Figure 8 below,

- Use nodal analysis to find the open circuit voltage V_{OC} (which will be the Thevenin equivalent voltage V_T for the circuit inside the dotted box).
- Confirm your answer from (a) by using superposition to find the open circuit voltage V_{OC} .

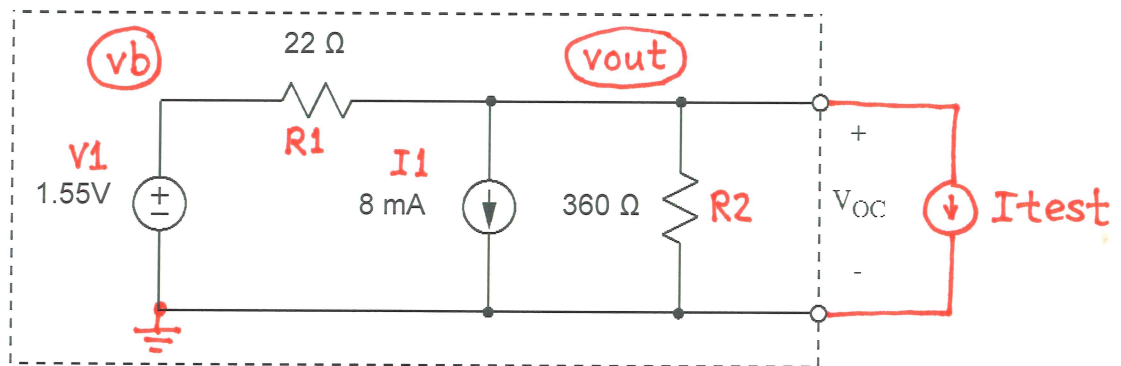


Figure 8.

- Determine the Thevenin equivalent for the circuit inside the dotted box. Sketch the Thevenin equivalent circuit, indicating numerical values for V_T and R_T .
- Using a DC sweep in pSpice, simulate the V-I characteristic of both the circuit in Figure 8 and your Thevenin equivalent from (c) and verify that they have the same V-I characteristic.