

ECE 3050 Analog Electronics Quiz 1

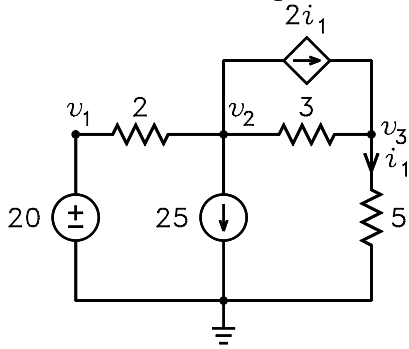
January 14, 2009

Professor Leach Last Name: _____ First Name: _____

Instructions. Print your name in the spaces above. Place a box around any answer. **Honor Code Statement:**

I have neither given nor received help on this quiz. Initials _____

- Use superposition, Ohm's Law, voltage division, and current division to solve for i_1 .
Use the solution for i_1 to solve for v_1 , v_2 , and v_3 using only KCL and Ohm's Law.



$$i_1 = \frac{20}{2+3+5} - 25 \cdot \frac{2}{2+3+5} + 2 \cdot i_1 \cdot \frac{3}{2+3+5}$$

$$i_1 := \frac{\frac{20}{2+3+5} - 25 \cdot \frac{2}{2+3+5}}{1 - 2 \cdot \frac{3}{2+3+5}} \quad i_1 = -7.5$$

$$v_1 := 20$$

$$v_3 := i_1 \cdot 5$$

$$v_3 = -37.5$$

$$v_2 := v_3 - (2 \cdot i_1 - i_1) \cdot 3$$

$$v_2 = -15$$