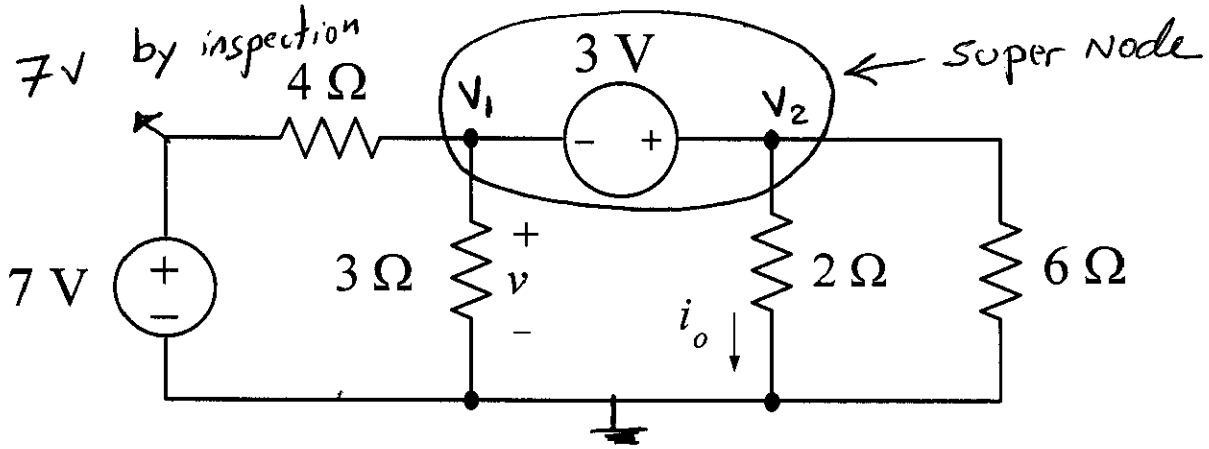
EE 201-06 – Winter 2012(112)
Quiz 2

SER	ID	NAME KEY



For the circuit shown above, using the nodal voltage method division method find v and i_o?

Solution

KCL on super Node

$$\frac{V_1 - 7}{4} + \frac{V_1}{3} + \frac{V_2}{2} + \frac{V_2}{6} = 0$$

X 12

$$3V_1 - 21 + 4V_1 + 6V_2 + 2V_2 = 0$$

$$7V_1 + 8V_2 = 21 \quad — ①$$

From Super Node $\quad V_2 - V_1 = 3 \quad — ②$

Solving ① and ② $\Rightarrow$ $V_1 = -0.2$ V, $V_2 = 2.8$ V

$\Rightarrow v = V_2 = -0.2$ V

$i_o = \frac{V_2}{2} = \frac{2.8}{2} = 1.4$ A