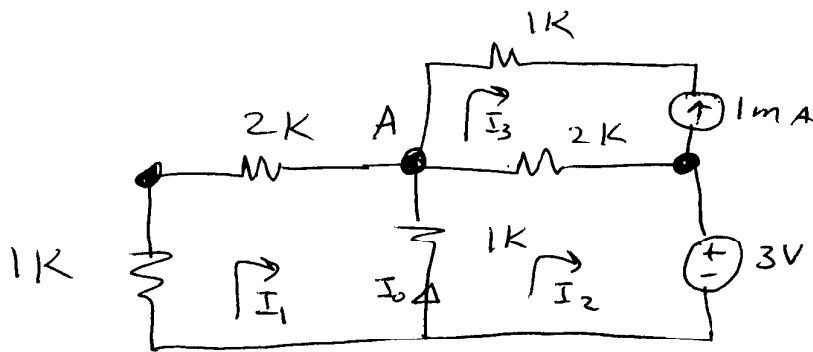


# ECE 210 QUIZ 5 - KEY



loops

$$1000 I_1 + 2000 I_1 + 1000 (I_1 - I_2) = 0 \Rightarrow 4000 I_1 - 1000 I_2 = 0 \quad (1)$$

$$-1000 (I_1 - I_2) + 2000 (I_2 - I_3) + 3 = 0 \Rightarrow -1000 I_1 + 3000 I_2 = -5 \quad (2)$$

Note  $I_3 = -1 \text{ mA}$

$$(1) + 4 \times (2)$$

$$11000 I_2 = -20$$

$$I_2 = -\frac{20}{11} \text{ mA}$$

$$4000 I_1 = 1000 I_2$$

$$= -\frac{20}{11}$$

$$I_1 = -\frac{5}{11} \text{ mA}$$

$$I_0 = -(I_1 - I_2) = -15/11 \text{ mA}$$

nodes

$$\frac{A}{3} + \frac{A}{1} + \frac{A-3}{2} - 1 = 0$$

$$2A + 6A + 3A - 9 - 6 = 0$$

$$11A = 1$$

$$A = 1/11$$

$$I_0 = -A/1000 =$$

$$-15/11 \text{ mA}$$

1