

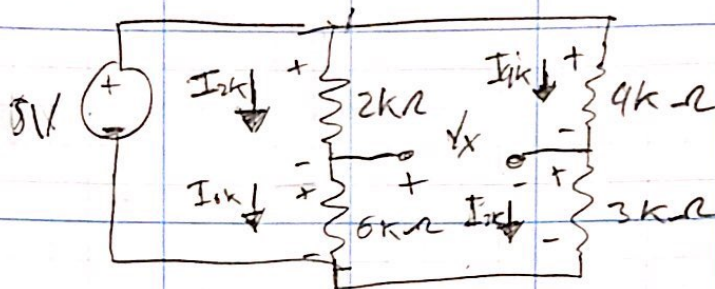
Name Nash Stephens

Sheet No. 1 of 1

For EECE 2213 AD2

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2.28 a)



$$R_{eq} = [(2k\Omega + 6k\Omega) \parallel (4k\Omega + 3k\Omega)] = 4.8k\Omega$$

$$R_{eq} = 4.8k\Omega$$

$$I_s = \frac{V}{R} = \frac{5V}{4.8k\Omega} = 1mA$$

$$V_{2k} = (5V) \left( \frac{2k\Omega}{2k\Omega + 6k\Omega} \right) = 1.25V$$

$$V_{6k} = (5V) \left( \frac{6k\Omega}{2k\Omega + 6k\Omega} \right) = 3.75V$$

$$V_{4k} = (5V) \left( \frac{4k\Omega}{4k\Omega + 3k\Omega} \right) = 3.75V$$

$$V_{3k} = (5V) \left( \frac{3k\Omega}{4k\Omega + 3k\Omega} \right) = 1.25V$$

$$V_x = \left[ (5V) \left( \frac{4k\Omega}{4k\Omega + 3k\Omega} \right) \right] - \left[ (5V) \left( \frac{6k\Omega}{2k\Omega + 6k\Omega} \right) \right] = 2.5V$$

$$I_{2k+6k} = (1mA) \left( \frac{4k\Omega}{2k\Omega + 6k\Omega} \right) = 0.6mA = I_{2k} = I_{6k}$$

$$I_{4k+3k} = (1mA) \left( \frac{4k\Omega}{4k\Omega + 3k\Omega} \right) = 0.4mA = I_{4k} = I_{3k}$$