

ECE 3 HW 2

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April 8, 2022

From KCL we have that at node V6

$$\frac{6 - V_B}{3} + \frac{6 - V_A}{5} = 1.7111$$

Likewise at node A

$$I_R + \frac{V_A - V_B}{14} = \frac{6 - V_A}{5}$$

And at node B

$$\frac{V_A - V_B}{14} + \frac{6 - V_B}{3} = \frac{V_B}{2}$$

Solving these system of equation we get

$$V_A = 3.323V$$

$$V_B = 2.4729V$$

$$I_R = 0.4747$$

Therefore we have

$$R = \frac{A}{I_R} = \boxed{7\Omega}$$