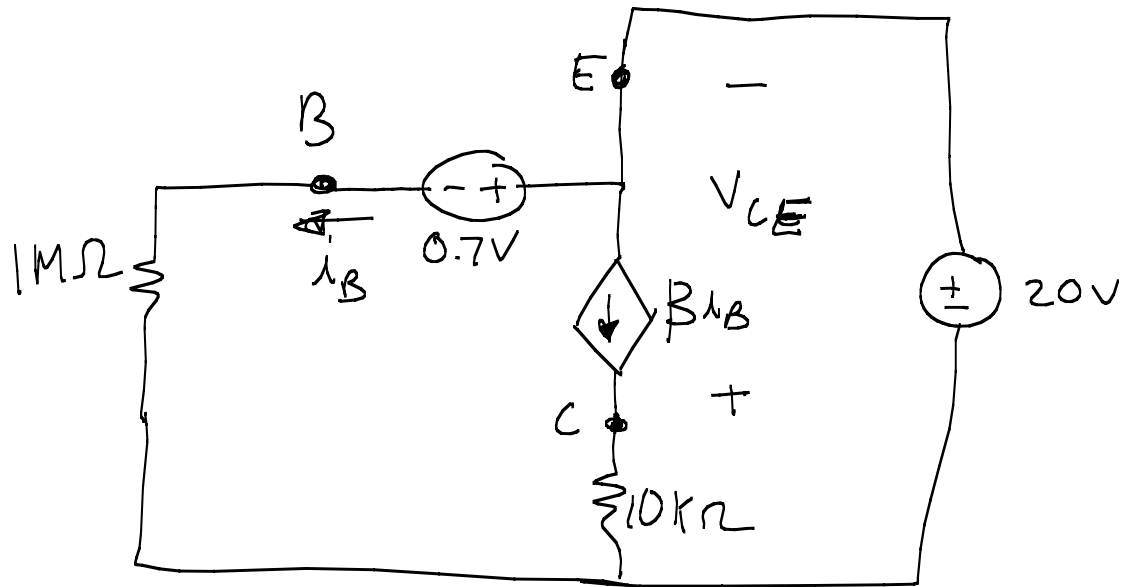
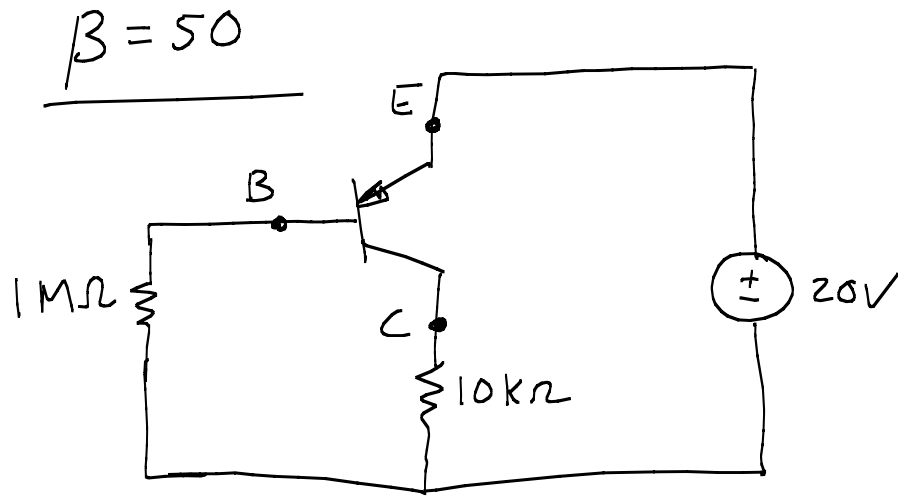


Problem 2

Determine i_c & V_{CE}

Assume Active Region



KVL (Perimeter)

$$-i_B (1000 \text{ k}\Omega) - 0.7 \text{ V} + 20 \text{ V} = 0$$

$$i_B = 0.0193 \text{ mA} > 0 \quad \underline{\text{OK}}$$

$$i_C = \beta i_B = 50 (0.0193 \text{ mA}) = 0.965 \text{ mA}$$

KVL (Right)

$$- (0.965 \text{ mA}) (10 \text{ k}\Omega) + V_{CE} + 20 \text{ V} = 0$$

$$V_{CE} = -10.35 \text{ V} < -0.2 \text{ V} \quad \underline{\text{OK}}$$

Active Region

$$i_C = 0.965 \text{ mA}$$

$$V_{CE} = -10.35 \text{ V}$$