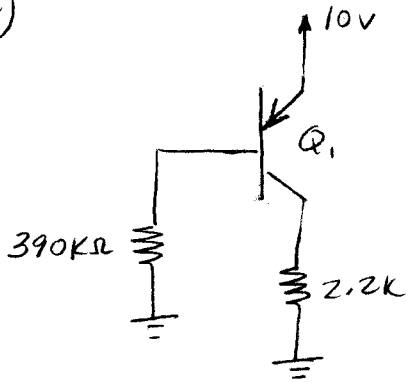


ECE 302 - Homework Set # 5 - 30 Points

FOR THE FOLLOWING, ASSUME THE STATE INDICATED. VERIFY ALL THE "CHECKS" ASSOCIATED WITH THE ASSUMED STATE. STATE WHETHER THE ASSUMPTION IS CORRECT OR NOT. (DO NOT CHANGE THE ASSUMED STATE)

A)



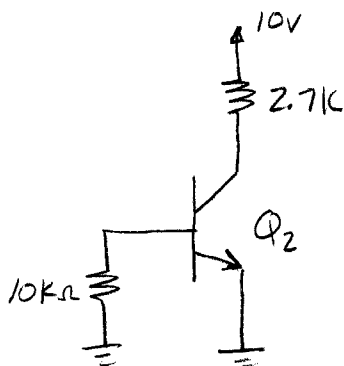
$$V_{BE(ON)} = 0.7V$$

$$V_{CE(SAT)} = 0.2V$$

$$\beta_F = 100, \beta_R = 1$$

ASSUME Q_1 IS SATURATED

B)



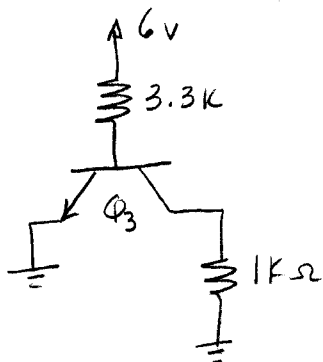
$$V_{BE(ON)} = 0.7V$$

$$V_{CE(SAT)} = 0.2V$$

$$\beta_F = 100, \beta_R = 1$$

ASSUME Q_2 IS INVERSE-ACTIVE

C)



$$V_{BE(ON)} = 0.7V$$

$$V_{CE(SAT)} = 0.2V$$

$$\beta_F = 100, \beta_R = 1$$

ASSUME Q_3 IS ACTIVE.