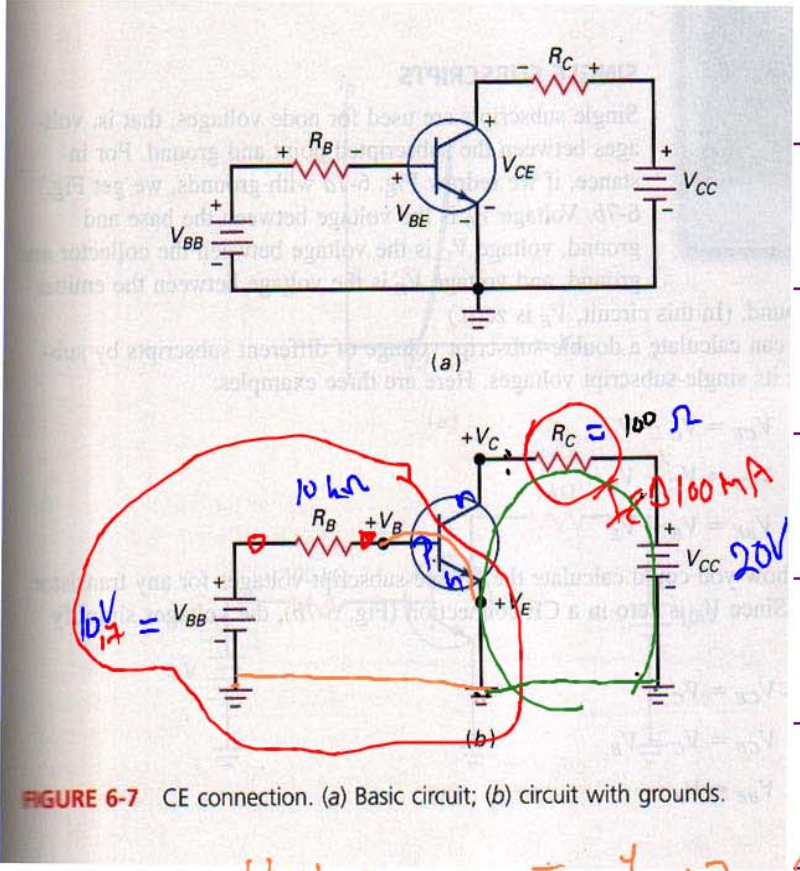
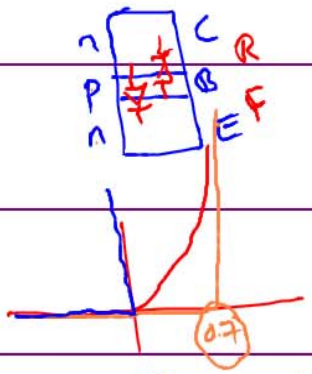


FIGURE 6-7 CE connection. (a) Basic circuit; (b) circuit with grounds.

kΩ * mA = volt

npn



KVL: $10 - I_B * 10^4 - 0.7 = 0$

$10^4 I_B = 10 \Rightarrow I_B = 10^{-3} = 1$ mA

$\beta = 100 \equiv \frac{I_C}{I_B}$ $\quad I_C = \beta I_B = 100 * 1\text{ mA} = 100$ mA

$V_{AB} \equiv V_A - V_B$ $\quad V_{CE} \equiv V_C - V_E$

$20 - 100 * 10^{-3} * 100 - V_{CE} = 0$

$V_{CE} = 20 - 10 = 10$ Volt

$V_{CB} + V_{BE} = V_{CE}$

$V_{CB} + 0.7 = 10$

$V_{CB} = 9.3$ Volt