Robert E. Simpson
Introductory Electronics For Scientists and Engineers, 2nd edition
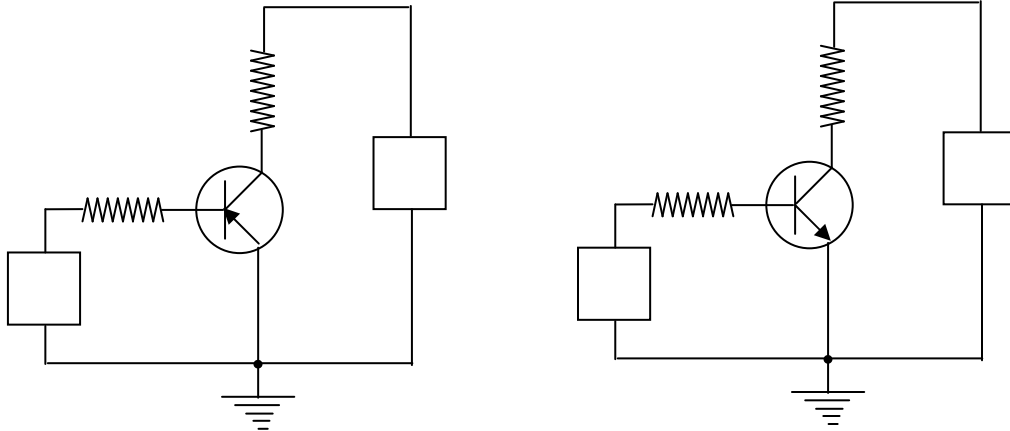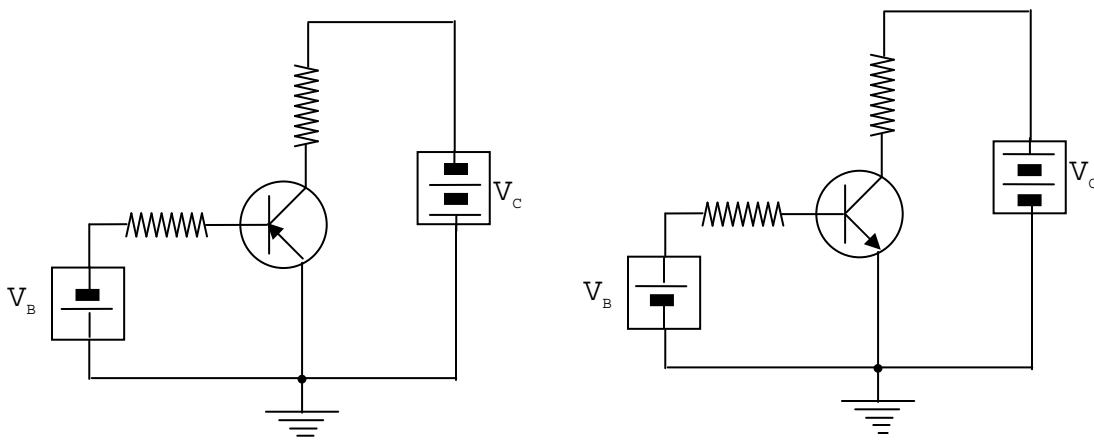October 31, 2008

Problem 5-3

Label the polarity of the two voltage suppluies:

Solution:

Under proper bias (unless the transistor is used as a switch), the B-E diode
should be forward bias and the B-C diode should be reverse bias. So we have:

Note that $!V_C| > |V_B|+0.6V$.