

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Department of Electrical Engineering and Computer Science
6.301 Solid State Circuits

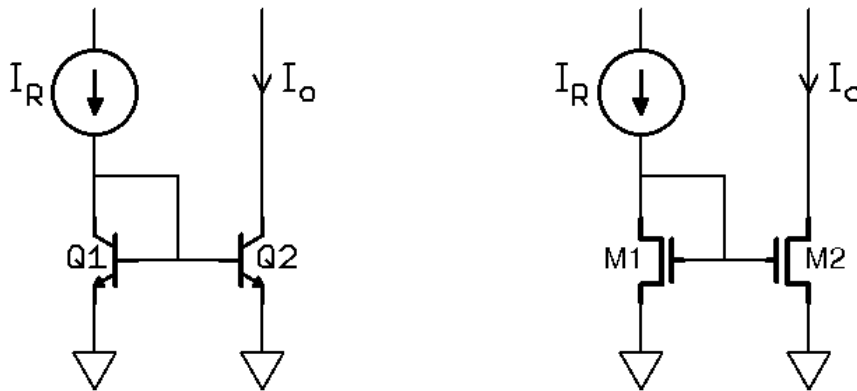
Fall 2013
Problem Set 5

Issued : Oct 17, 2013
Due : Oct 22, 2013

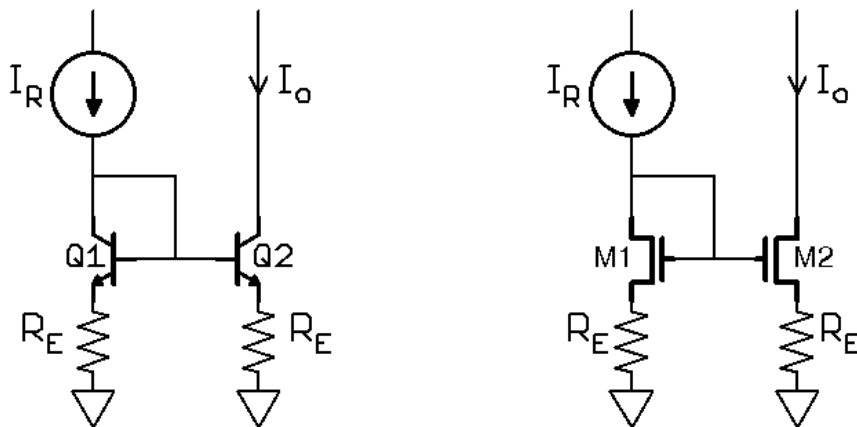
Problem 1: Current Mirror

Find the output impedance, R_O , of the following current mirrors:

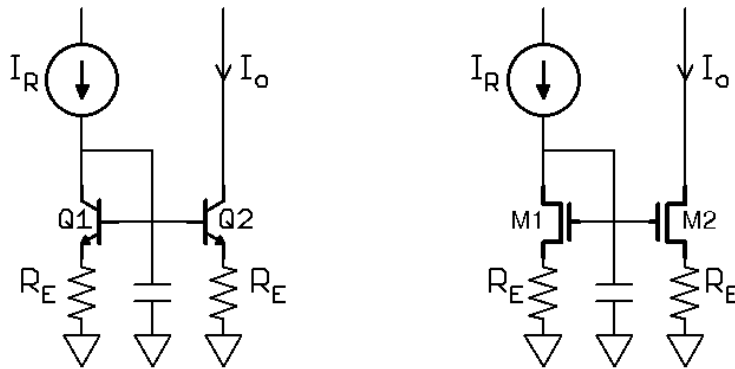
(a) Simple Mirror



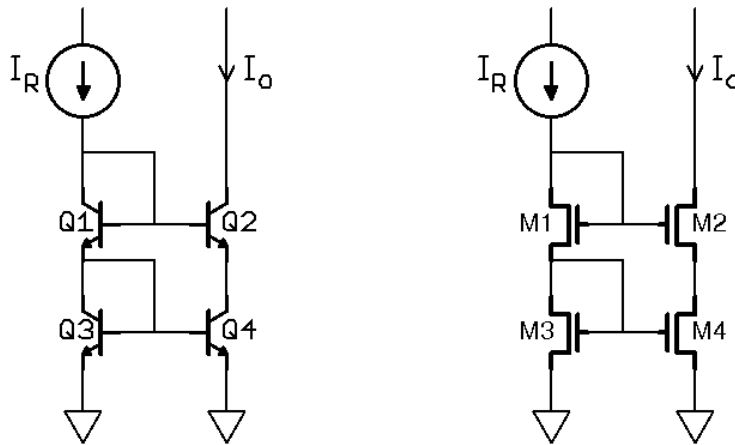
(b) Emitter Degeneration



(c) Emitter Degeneration with bypassed base (Capacitor is large)



(d) Cascode



(e) Double Cascode

