Problem 4.7

Transistor parameters:

$B_p = 200$ (This is $B$)

$V_A f = 100 \, \mu V$ (This is $V_A$ forward bias)

The transistor model doesn't have breakdown voltage.
So we need to model the voltage with diode D1.

Diode Parameters:

$V_{B_D} = 20 \, \mu V$ (Breakdown Voltage)