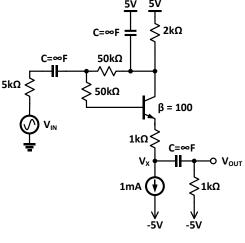Q1 (a) (**10 points**): For the amplifier circuit shown below, calculate the following DC operating point parameters (Assume $|V_{BE}|$ for an ON transistor to be 0.7V):

$I_B$ =_____          $I_C$ = _____          $V_X$ = _____



(b) (**10points**): Calculate the following small signal parameters (assume Vth = 25mV):

gm = _____          $r_\pi$ = _____

(c) (**10 points**) Draw the small signal model of the amplifier shown above.

Q2 (**Bonus 2points**): Which city is hosting 2020 Olympics? _____