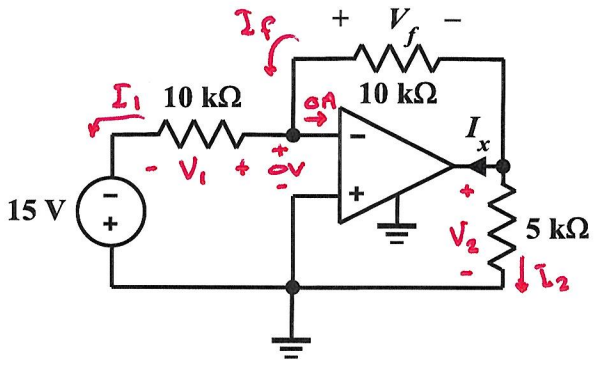
EE 2240

Homework Problem #040



The OpAmp is ideal. Determine:

(a) The value of V_f.

$V_1 = 0 + 15 = 15\ V$

$I_1 = \frac{V_1}{10k\Omega} = 1.5\ mA$

$I_f = I_1 + 0 = 1.5\ mA$

$V_f = -(10k\Omega)\, I_f = -15\ V$

(b) The value of I_x.

$V_2 = -V_f + 0 = 15\ V$

$I_2 = \frac{V_2}{5k\Omega} = 3\ mA$

$I_x = -I_f - I_2$

$= -1.5\ mA - 3\ mA$

$= -4.5\ mA$