SHOW ALL WORK!!!!
REPORT ALL NUMBERS TO THREE SIGNIFICANT FIGURES!
Use the conversion constants and data given on the front page.

Given the network shown. Use the sign convention used in class, OR make it clear to the grader what sign convention you use.

(a) How many TOTAL junctions are there?
(b) How many total unknown currents are there?
(c) How many loop equations will be needed?
(d) Write the junction equation for junction (A) using the current designations given.
(e) Write the loop equation for the interior loop designated (B). Start at the lower left corner and go clockwise around the loop.

\[ a) \ \text{we have}\ 5 \ \text{junction} \]
\[ b) \ \text{we have}\ 2 \ \text{total unknown currents} \]
\[ c) \ \text{number of independent junctions} = 5-1 = 4 \]
\[ \text{number of loop eqns needed} = 9-4 = 5 \]
\[ d) \ I_8 + I_5 - I_7 - I_6 = 0 \ . \ \text{It's up to sign} \]
\[ e) \ \text{if we choose sign as in class, then we have:} \]
\[ R_8 I_{10} - R_7 I_8 - I_6 R_6 + R_{10} I_{10} + R_9 I_{10} = 0 \]