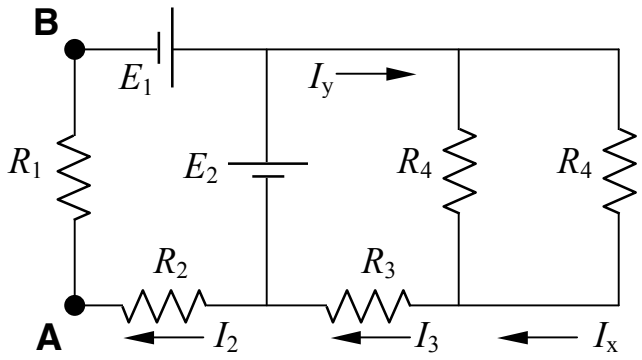
Name: _____ Sec. _____ **P212: Quiz 1 Week 6**



$R_1 = 10\ \Omega$ $R_2 = 15\ \Omega$
$R_3 = 30\ \Omega$ $R_4 = 25\ \Omega$
$E_1 = 10$ V $E_2 = 30$ V

1) What is the relationship between the magnitudes of the currents I_x and I_y? **[4]**

a) $|I_x| > |I_y|$ b) $|I_x| = |I_y|$ c) $|I_x| < |I_y|$

Rubric:
Correct answer (4)

2) What is the current I_2 through resistor R_2? (A positive value means current flows in the direction of the arrow on the diagram.) **[5]**

$E_1 - E_2 - I_1R_1 - I_1R_2 = 0$
$I_1 = -0.8$A

Rubric:
Correct problem setup (2)
Correct answer (2)
Correct sign (1)

3) What is the voltage difference $V_A - V_B$ between points **A** and **B**? **[5]**

$V_B - V_A = -I_2R_1 = 8$V

Rubric:
Correct problem setup (3)
Correct answer (2)

4) What is the current I_y? (A positive value means current flows in the direction of the arrow on the diagram.) **[6]**

$E_2 - I_y/2\ R_4 - I_yR_3 = 0$ so $I_y = 0.71$A.

Rubric:
Correct problem setup (3)
Correct answer (2)