ECOR 2606

Practice test no. 3

Figure 1 shows a circuit not unlike a Wheatstone Bridge. Write the simultaneous equations which describe the seven unknown currents.

Write a function that takes as input the unknown resistance R_2 and outputs current I_4. Test your function for $R_2 = 3$ ohms and print the state using fprintf.

Plot I_4 for R_2 varying between 0.1 and 10 ohms.

Calculate the value of R_2 that makes I_4 equal -0.01 A and output the result using fprintf.

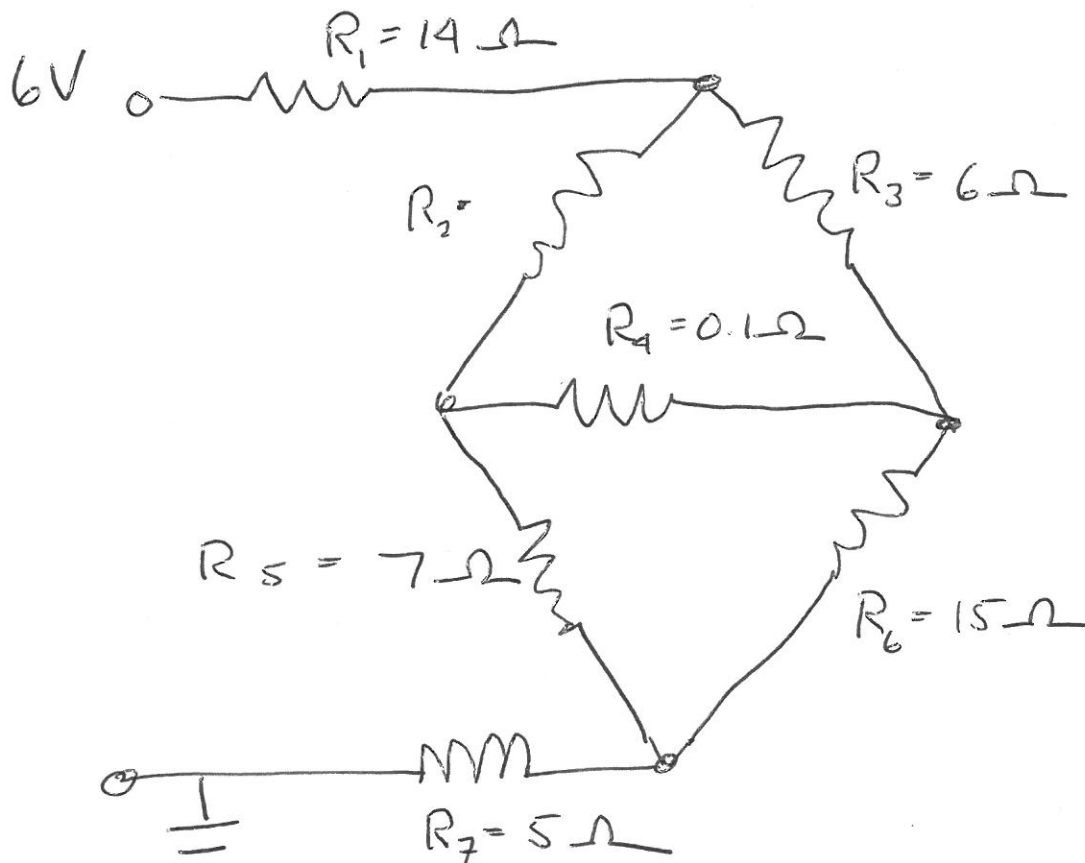Which value of R2 between 0.1 and 10 ohms maximizes I_4?

Figure 1: Circuit