CSDS 455: Applied Graph Theory
Homework 17
Due Wednesday, October 21 at the start of class

Homework rules: You are welcome to work with others to solve these problems. If you do get help from someone else (or from some other resource), please indicate that on your homework.

Problem 1: Let G be a graph that has a nowhere-zero 4-flow. Suppose $G - e$ is bridgeless. Prove that $G - e$ has a nowhere-zero 5-flow.

Problem 2: Let G_1 be a graph with a nowhere-zero k_1-flow and let G_2 be a graph with a nowhere-zero k_2-flow. Prove that the $G_1 \cup G_2$ has a nowhere-zero $k_1 k_2$-flow.