MATH 213 – DISCRETE MATH – Fall 2024 – Quiz 7 – Friday, Nov. 8

This quiz contains 3 questions – You have 15 minutes

Name: _____

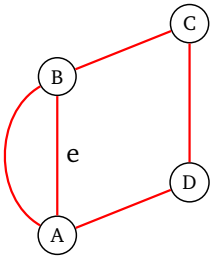
Problem 1. Let $A = \{1, 2, 3, 4, 5\}$. Write (as a set of ordered pairs) the equivalence relation R corresponding to the set partition:

$$A = \{1, 3, 5\} \cup \{2, 4\}.$$

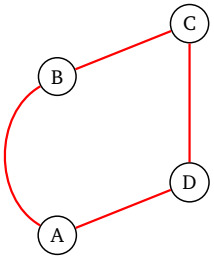
Solution:

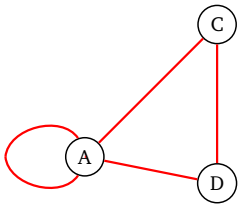
$$R = \{(1,1), (1,3), (1,5), (3,1), (3,3), (3,5), (5,1), (5,3), (5,5), (2,2), (2,4), (4,2), (4,4)\}.$$

Problem 2. For the following graph G, **clearly** draw the graphs $G - e$ and $G \cdot e$.



Solution: The first graph is $G - e$; the second is $G \cdot e$.





Problem 3. True or False (*no work needed*). The following graphs are bipartite:

(a) The complete graph K_4

Solution: False

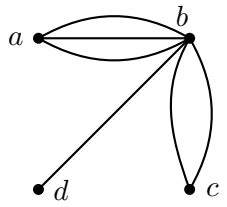
(b) The cycle graph C_8

Solution: True

(c) The hypercube graph Q_4

Solution: True

(d) This graph:



Solution: True