5

Math 61 Quiz Week 3 10 minutes. Use pen only

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SECTION: Cross one box below

Day \ T.A.	John	Zach	Sam
Tuesday	1A	1C	1E
Thursday	1B	1D	1F

Problem 1. Circle ALL that apply. Given the digraph of the following relation R on $X = \{a, b, c, d, e, f\}$, then R has the following properties:

(a) reflexive,

(b) symmetric,

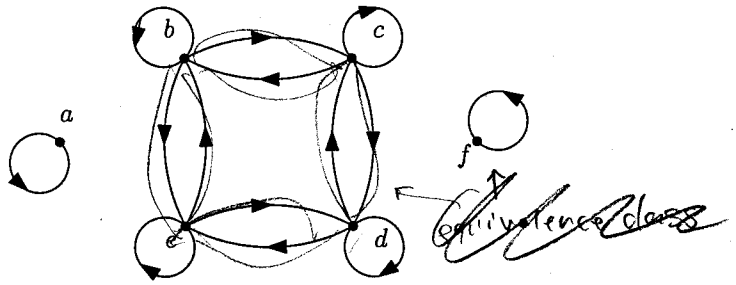
(c) antisymmetric,

(d) A function from X to X.

(e) transitive,

(f) a partial order,

(e) an equivalence relation.

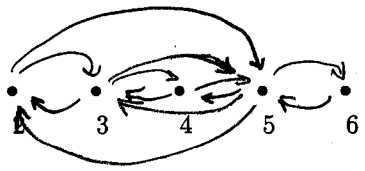


R

[2,3,4,5,6]

Problem 2. Let $X = \{2, 3, 4, 5\}$ and R be the relation on X: aRb if a and b have no common divisors except 1. Example $2\ R\ 5$ but $4\ \not R\ 6$ (2 is a common divisor of 4 and 6). Draw the digraph of the relation.

2/5
3/5



Problem 3. Circle the correct answer. How many functions $f : X \to Y$ are there if $|X| = 8$ and $|Y| = 5$?

(a) 5^8,

no idea

(b) $8 \cdot 7 \cdot 6 \cdot 5 \cdot 4$,

(c) $5!$,

(d) 8^5

(e) $8!$.

(f) A complicated formula using inclusion-exclusion.