CS313K: Logic, Sets, and Functions

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Lecture 27 – Chap 8 (8.7, 8.8)

About the Final

Office hours at normal times next week

The final exam Tuesday, May 18, 9:00 AM – noon, room WEL 2.224

Exam will focus on induction, quantifiers, and set theory

Bring some #2 pencils and scratch paper

You will answer on a Green ScanTron Answer Sheet

(supplied at the test)

Same rules as the midterms: you may bring notes and the book, but not laptops, etc.

The exam is worth 300 points

There will be 30–60 questions worth 5–10 points each

Many questions will be comparable to those on the iClicker quizzes

I will try to design the test to take 2 hours

You will have 3 hours

Note that the ScanTron answer sheet will have space for 120 questions but you will only have 30–60 questions

The ScanTron answer sheet will offer 10 alternatives for each answer but there will typically be only 5 choices A–E

In case you think in terms of letter grades on the test:

grade	*% correct*	*score*	*incorrectly answered questions on 60 question exam*	*incorrectly answered questions on 30 question exam*
A	90	270	6	3
B	80	240	12	6
C	70	210	18	9

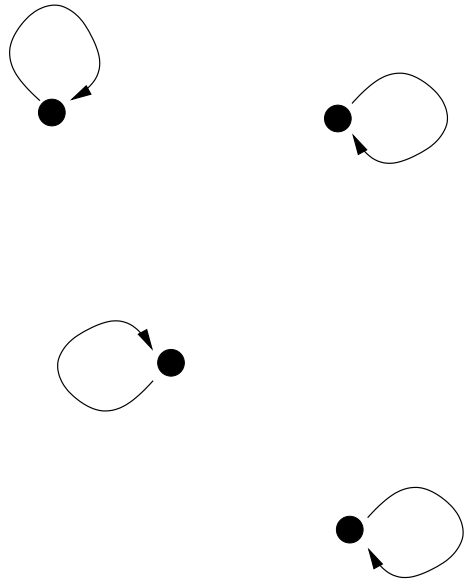
Informal Poll

grade	*% correct*	*score*	*missable [60]*	*missable [30]*
A	90	270	6	3
B	80	240	12	6
C	70	210	18	9

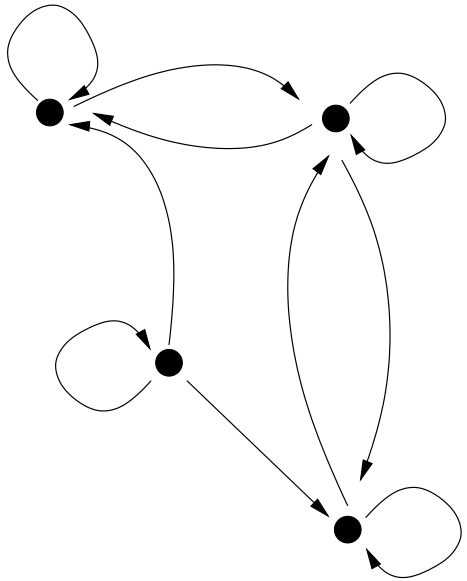
Which do you prefer:

A. 60 questions (5 pts each at 3 min/question)
B. 30 questions (10 pts each at 6 min/question)

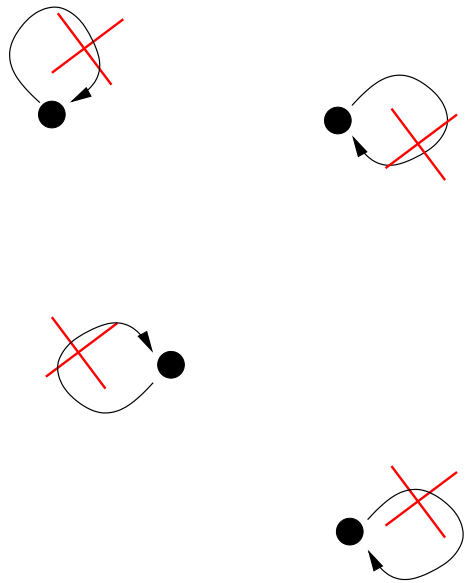
Reflexive: $(\forall x \in A : Rxx)$



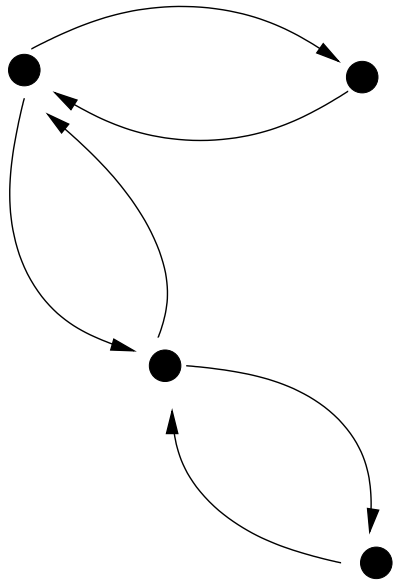
Reflexive: $(\forall x \in A : Rxx)$



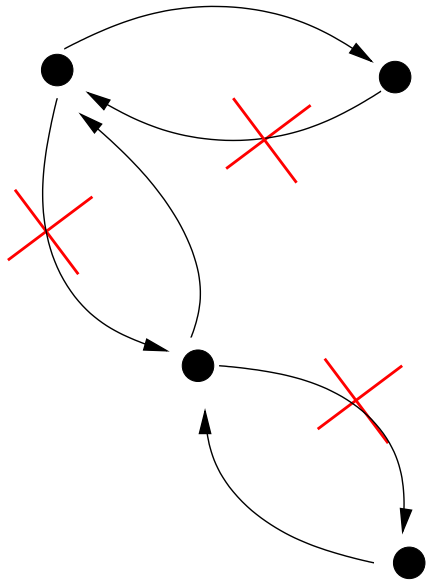
Irreflexive: $(\forall x \in A : \neg Rxx)$



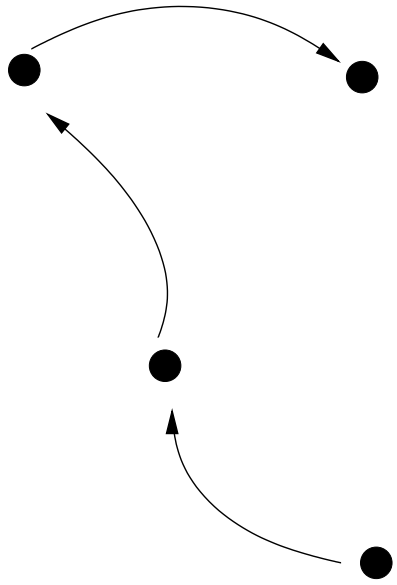
Symmetric: $(\forall x, y \in A : Rxy \rightarrow Ryx)$



Asymmetric: $(\forall x, y \in A : Rxy \rightarrow \neg Ryx)$

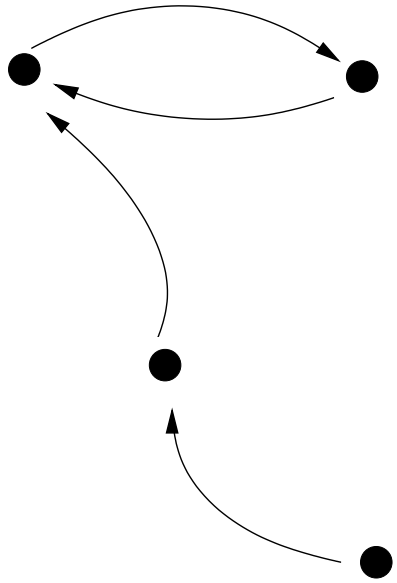


Asymmetric: $(\forall x, y \in A : Rxy \rightarrow \neg Ryx)$



Antisymmetric:

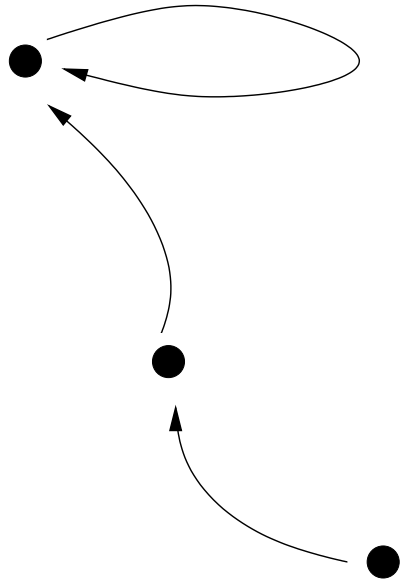
$(\forall x, y \in A : (Rxy \wedge Ryx) \rightarrow x = y)$



This graph is NOT antisymmetric!

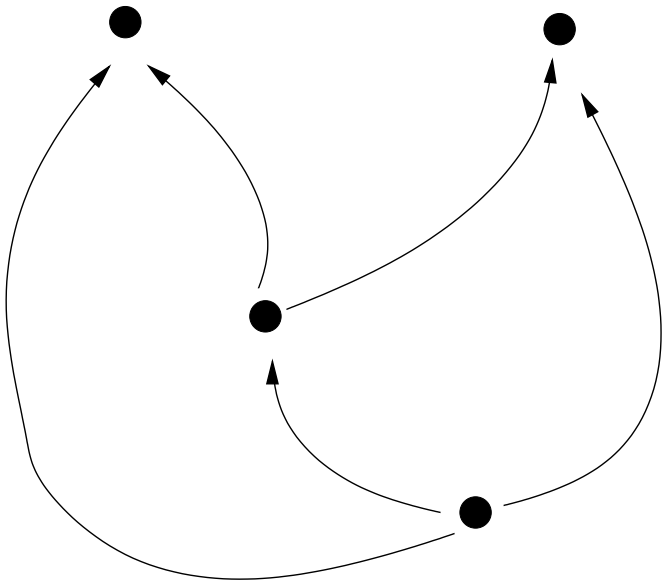
Antisymmetric:

$(\forall x, y \in A : (Rxy \wedge Ryx) \rightarrow x = y)$

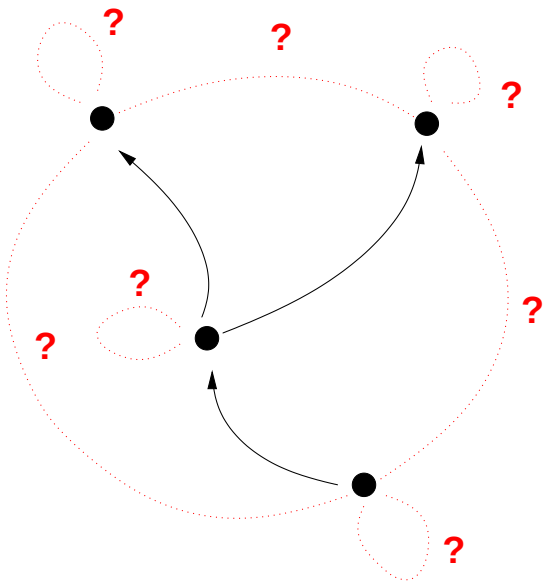


This graph is antisymmetric!

Transitive: $(\forall x, y, z \in A : (Rxy \wedge Ryz) \rightarrow Rxz)$

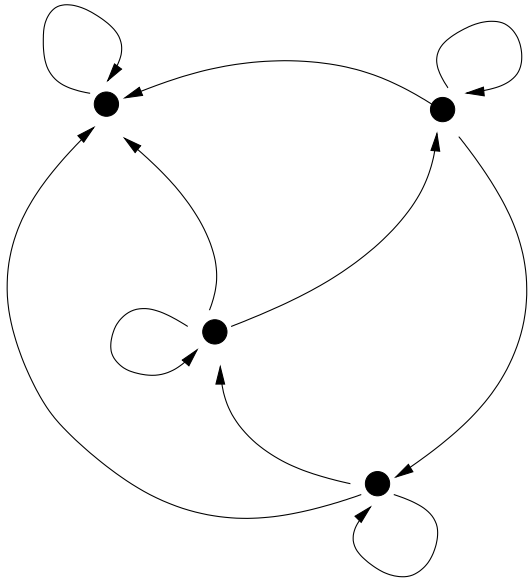


Total: $(\forall x, y \in A : Rxy \vee Ryx)$



This graph is NOT total!

Total: $(\forall x, y \in A : Rxy \vee Ryx)$



This graph is total!

Connected: $(\forall x, y \in A : Rxy \vee Ryx \vee x = y)$