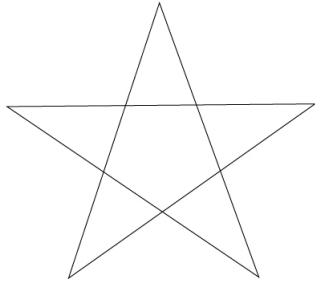


UW Math Circle
February 5, 2015
Homework

1. Is the graph below a **planar** graph?



2. At Middleton Middle School, there are 6 clubs: Drama Club, Math Team, Recycling Club, French Club, Spanish Club and Debate Team. The following students are members of each club:

Club	Members
Drama Club	Andrew, Bob, Catherine
Math Team	Andrew, Catherine, Dave
Recycling Club	Bob
French Club	Catherine, Dave, Elise
Spanish Club	Bob, Elise
Debate Team	Bob

What is the minimum number of days needed for the clubs to meet, provided that no two clubs with a shared member meet on the same day?

3. Show that if n people attend a party, and shake hands with some other people attending the party (they cannot shake hands with themselves), then at least two people shook hands with the same number of people.