

# Overview of Math 105

- Some math courses focus first on **techniques** (solving equations, factoring polynomials, drawing graphs. . . ) and then study applications of those techniques.

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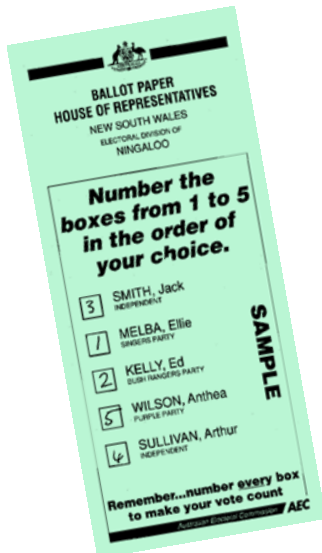
- Some math courses focus first on **techniques** (solving equations, factoring polynomials, drawing graphs. . . ) and then study applications of those techniques.
- In Math 105, we will focus on **real-life applications** where mathematics can help model problems, understand structures, and find solutions.

# Overview of Math 105

- Some math courses focus first on **techniques** (solving equations, factoring polynomials, drawing graphs. . . ) and then study applications of those techniques.
- In Math 105, we will focus on **real-life applications** where mathematics can help model problems, understand structures, and find solutions.
- Some of the mathematics we'll encounter may be familiar to you; some of it will probably be new.

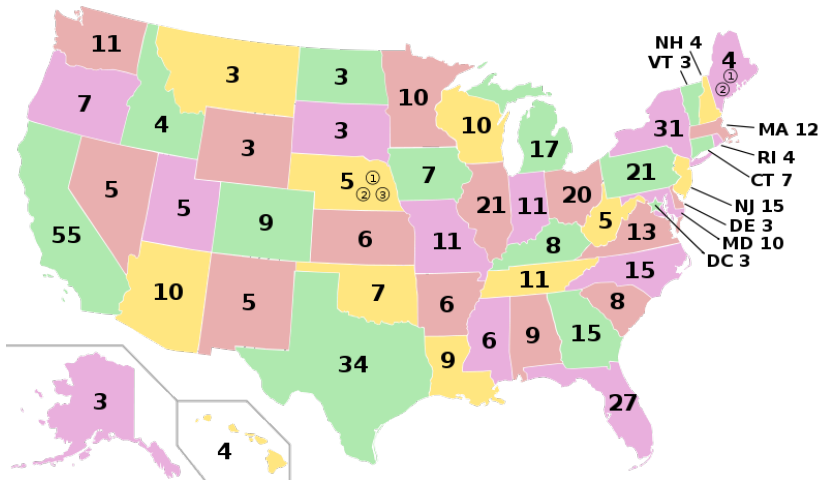
# Part 1: The Mathematics of Social Choice

## Voting and Elections



# Part 1: The Mathematics of Social Choice

## Measuring Power



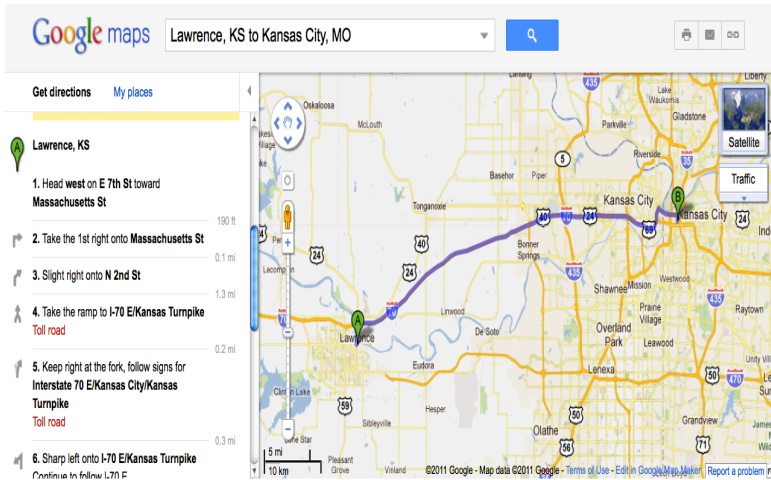
# Part 1: The Mathematics of Social Choice

## Fair-Division Problems



# Part 2: The Mathematics of Networks

## Finding Paths in Networks



Google maps Lawrence, KS to Kansas City, MO

Get directions My places

Lawrence, KS

1. Head west on E 7th St toward Massachusetts St
2. Take the 1st right onto Massachusetts St
3. Slight right onto N 2nd St
4. Take the ramp to I-70 E/Kansas Turnpike  
Toll road
5. Keep right at the fork, follow signs for Interstate 70 E/Kansas City/Kansas Turnpike  
Toll road
6. Sharp left onto I-70 E/Kansas Turnpike  
Continue to follow I-70 E

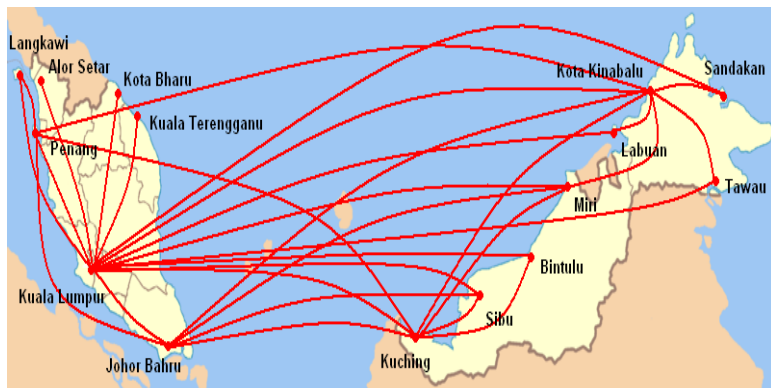
190 ft  
0.1 mi  
1.3 mi  
0.2 mi  
0.3 mi

5 mi  
10 km

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## Part 2: The Mathematics of Networks

### Building Networks Efficiently





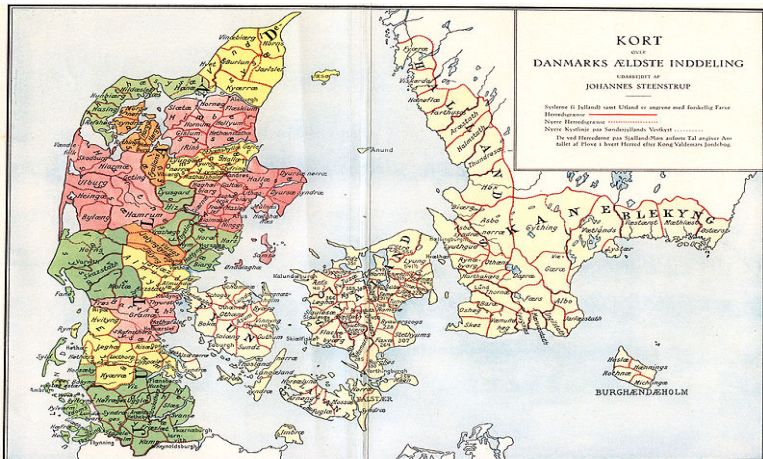
# Part 2: The Mathematics of Networks

## Scheduling Multiple Tasks



# Part 2: The Mathematics of Networks

## How to Color a Map



# Part 3: Other Topics

## Symmetry and Patterns



## Part 3: Other Topics

### Chance and Probability

