Midterm 1 Recap

The exam was more difficult than the Fall 2011 Midterm 1. Typically, more than 75% of students receive A's & B's in 61A.

Problem 4(c): Through doesn't rhyme with cough, and 20 (twenty) doesn't rhyme with 10 (ten). Sight rhyme: A pair of words that don't rhyme, but look like they should.

```
if first_tens(p) == 1:
    return second_tens(p) != 1
else:
    return second_tens(p) == 0
```

"You may not use boolean operator or"
Python Lists

List Comprehensions

```
>[map exp for <name> in <iter exp> if <filter exp>]

Short version: [map exp for <name> in <iter exp>]
```

Unlike generator expressions, the map expression is evaluated when the list comprehension is evaluated.

```
>>> suits = ['heart', 'diamond', 'spade', 'club']
>>> from unicodedata import lookup
>>> [lookup('WHITE ' + s.upper() + ' SUIT') for s in suits]
[ ['♡', '♢', '♤', '♧'], ['♡', '♢', '♤', '♧']]
```

Dictionaries

Limitations on Dictionaries

Dictionaries are unordered collections of key-value pairs.

Dictionary keys do have two restrictions:

- A key of a dictionary cannot be an object of a mutable built-in type.
- Two keys cannot be equal. There can be at most one value for a given key.

This first restriction is tied to Python's underlying implementation of dictionaries.

The second restriction is an intentional consequence of the dictionary abstraction.