

# Udacity Intro To Statistics Problem Set 6

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## Contents

### 1 Applying DeMorgan's First Law

The set of students that are female, or freshman, junior, or senior is equal to the set of students that are female, and freshman, junior or senior.

### 2 Combinations 1

How many ways to choose 4 kittens from a litter of 9.

This is equal to  $\binom{9}{4} = 126$

### 3 Problem 2 - Nucleotides

How many sequences of 8 nucleotides can be made using any of the 4 nucleotides A, C, G, T at each place of the sequence?

We have 4 choices for a nucleotide at each of the 8 positions, so the number of sequences is  $4^8 = 65536$ .

### 4 Problem 3 - Nucleotides

Suppose a sequence of 8 nucleotides contains 2 each of A, C, G, T. How many such sequences are there?

- 70
- 1120
- 2520
- 37800

## 5 Example of How to Draw a Circle

It seems like the easiest way to draw Venn Diagrams might be to use LaTeX built in graphics. The source code for this document has an example of how

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to draw a circle.