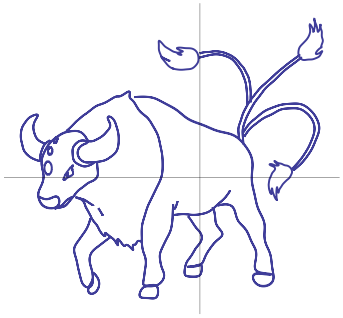
MATH:1260 Pokémath
The Mathematics of Pokémon Go®

Week 10 Monday, Spring 24

Popular curve:

Tauros-like curve



Plan for Today

- Module 2: Gotta Catch 'em All®
  - More Statistics

Class Reminders

- Project 2 work day in discussion on Thursday.
  - Extra credit once again available!
- Project 2 Stage 2: Data due Wednesday at Midnight.
- Project 2 Stage 3: Report due Wednesday April 3 at Midnight.

First, a note...

Average or Mean

One measure for the “center” of data is the average or the mean.

Notation $\overline{x}$

Definition: The mean of x_1, x_2, x_3 ... x_n is

$$\overline{x} = \frac{x_1+x_2+x_3+...+x_n}{n}$$

Eggs

I kept a little data from my recent eggs.

Of the eggs from stops, the ten most recent have been

4 of the green 2km eggs
5 of the orange 5km eggs
1 of the purple 10km eggs

What is the average distance I will have to walk to hatch these eggs?
(assuming regular incubators)

Voltorb

In the data set you worked with on Thursday. There were

26 Voltorbs with 0 stars
14 Voltorbs with 1 star
11 Voltorbs with 2 stars
3 Voltorbs with 3 stars

TopHat: What is the average number of stars in this data set?

Other measures of “Center”

Median

The median of a data set is the point such that half of the remaining data points are above it, and half are below it.

Mode

The mode of a data set is the data value that appears the most.

Median: the middle data value

We recall Dr. M's collection of Zapdos and their IV sums:

37, 40, 37, 36, 36, 43, and 38

How do we find the median?

How about Rayquaza and their IV sums?

40, 38, 41, 40, 37, and 39

Mode: the most frequent entry

Let’s use Zapdos IV sums as another example:

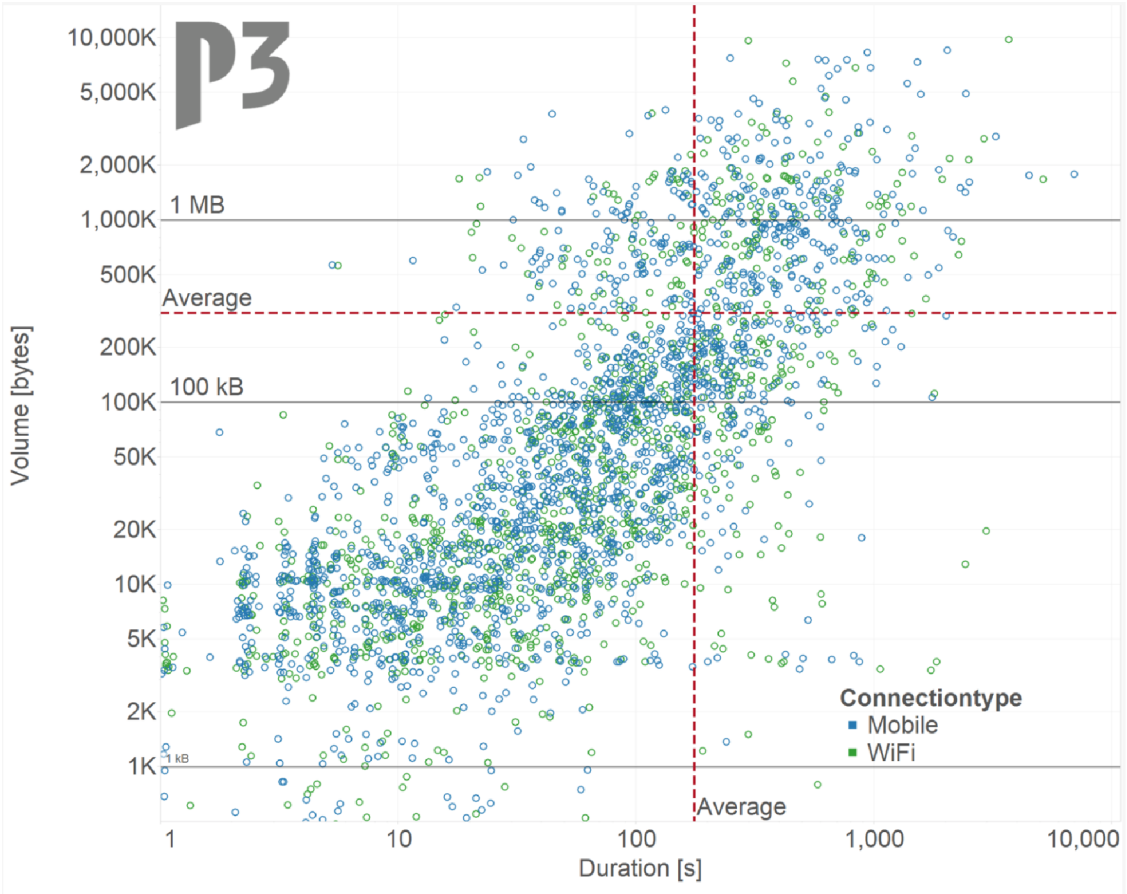
37, 40, 37, 36, 36, 43, and 38

How do we find the mode?

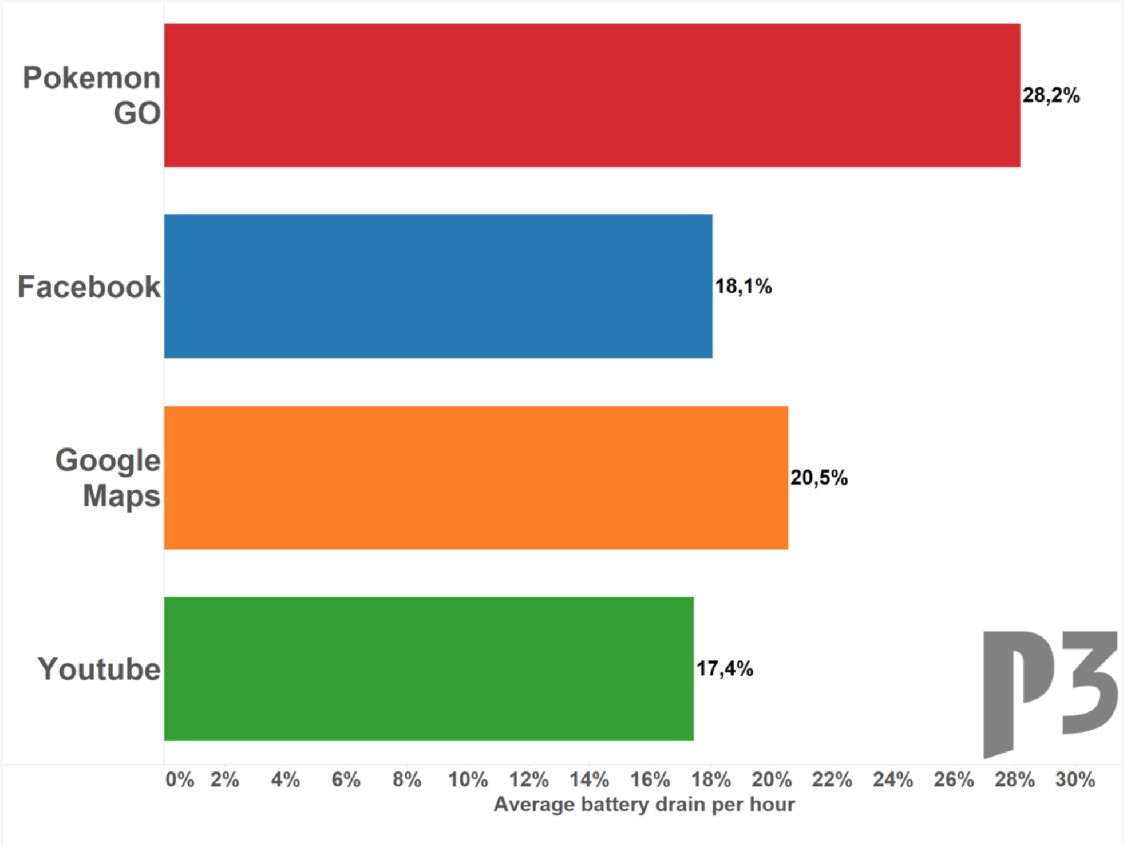
Rayquaza? 40, 38, 41, 40, 37, and 39

Data

Perhaps some of you have noticed, Pokemon GO chews through phone data!

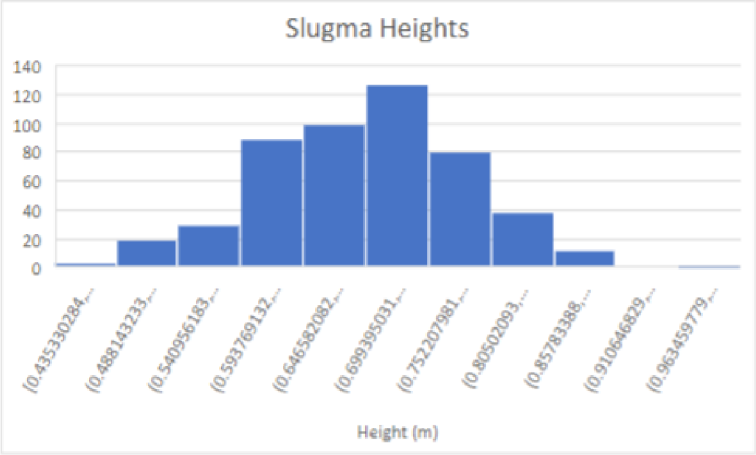


Battery Drain



Slugma

Here is a data set of the heights of many, many Slugma, collected by TAs over the years.



Mean for this data set of 500 Slugma is 0.699m.

What do you notice about the shape of the curve? The median and mode?

Normal Distribution

The height of each Pokemon is chosen from a **Normal Distribution**.

The means are given in this chart by species:
https://pokemondb.net/pokedex/stats/height-weight

	218	Slugma	FIRE	2′04″	0.7	77.2	35.0	71.4