

Today's Learning Goal(s):

By the end of the class, I will be able to:

- a) calculate probabilities and statistics from raw data presented in the media.

*Show **highlighting** on next 2 pages before students begin.*

Make sure students know how to save in proper location.

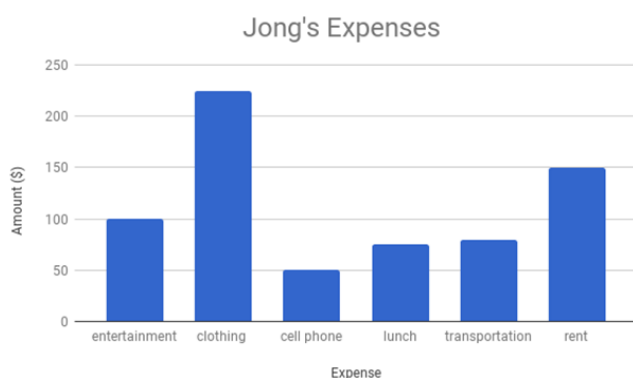
MBF3CI

Probability and Statistics in the MediaDate: Oct. 2/17

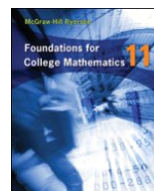
The number of observed data in a given interval or a category is known as the **frequency**.

For example,

A **frequency bar graph** is a diagram that represents quantities with horizontal or vertical bars, whose lengths correspond to the frequency of the particular category. There is always a gap between each bar.



Created in: Google Sheets 2017

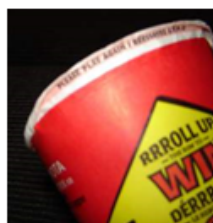


Go to p.119. It will show you how to create a **frequency bar graph** for Jong's raw data (his monthly expenses).

Use **Method 2**, and the screen capture at the bottom of the page to guide you .



On your own, using Google Sheets, replicate this example.
When it matches EXACTLY, name the file "Jong Expenses"
and submit the file using our Google Classroom.

Media Example: RRROLL Up the Rim Contest

Here is some information from their website based on the 2017 contest:

CONTEST CUPS

3. A total of 294,069,480 Cups will be produced for this contest. Cups will be available for distribution through to April 14th, 2017 or while supplies last, whichever occurs first. It is anticipated, based on estimated distribution, that these Cups will be distributed within 5 regions (each, a "Region"), as follows:

REGION	APPROX. GEOGRAPHIC AREA (CANADA)	APPROX. NO. OF CUPS
1	British Columbia	20,916,600
2	Alberta, Saskatchewan, Manitoba, Northwest Territories, Yukon & Nunavut	48,792,480
3	Ontario	154,202,040
4	Québec	36,783,480
5	Atlantic Provinces	33,374,880

We live in REGION 3

Frequency of cups printed

1. How many RRROLL Up cups were printed for the contest?

Answer: **294 069 480**

2. In class, you learned that the probability of winning a FOOD prize is about $\frac{1}{6}$. Exactly how many of these cups will be winning cups for a FOOD prize?

Answer: **49 011 580**



Using Google Sheets, create a frequency bar graph of **REGION Number** versus **APPROX NO. OF CUPS**. Name the file: "**Rrroll up the Rim**", and **submit the file using our Google Classroom**.
(Use Region # only)

Here is some more information from the website:

PRIZE DISTRIBUTION (by Region)

PRIZE	REGION 1 ("Winning" RIM TABS)	REGION 2 ("Winning" RIM TABS)	REGION 3 ("Winning" RIM TABS)	REGION 4 ("Winning" RIM TABS)	REGION 5 ("Winning" RIM TABS)
2017 Honda Civic Coupe Vehicles	3	7	20	5	5
55" LG 4K UHD TVs	11	24	79	19	17
\$5,000 CIBC Prepaid Cards	7	17	53	12	11
\$100 Tim Cards	1,707	3,982	12,586	3,002	2,723

4. Using the above tables, I can find many probabilities. For example, the probability of winning a Tim Card in Ontario is:

$$\frac{12\,586}{154\,202\,040} \text{ or about } 0.00816\%$$



Use this example as a guide to calculate the probability, as a fraction AND as a percent of:



- a) Winning a \$5000 Prepaid Card in Ontario

Answer: $\frac{53}{154\,202\,040}$ or 0.000 034 37%



- b) Winning a \$100 Tim Card in Canada

Answer: $\frac{25\,000}{294\,069\,480}$ or 0.008 5%



- c) Winning a Honda Civic in Canada

Answer: $\frac{40}{294\,069\,480}$ or 0.000 014%
 $\div \frac{14}{100\,000}$

5. Is it a "good chance" that you will win a car?

Answer: $\frac{1}{14\,000\,000}$ No

6. The probability of winning a national lottery is about 1 in 14 million.

Do you have a better chance to win a car or the lottery? (Pick one)

Answer: $\frac{1}{14\,000\,000}$ or 0.000 007 143%



the odds of winning a car are better than winning the lottery
 (almost twice)

$$\frac{7.1}{100\,000}$$