

Algebra 1B Live Lesson Class

U5L4: Frequency and Histograms
(Chapter 12-2 in textbook)



Agenda



1. Review topics and problems from Unit 5, Lesson 4 – Frequency and Histograms (Chapter 12-2 in textbook)

2. Use the 2-column note system to take better notes in math class. Bring your math notebook and pen or pencil to each math LiveLesson class.

2-Column Notes Template



1. Announcements/To Do's
2. School-Wide Learner Outcomes
3. LL Objectives
4. Vocabulary words
5. Problems
6. Summary (End of class)

1. Write down important details.
2. What are you going to work on this week?
3. Write down your own questions.
4. Definitions (fill in as we go)
5. Steps to solving problems
6. 1 or 2 sentences about the LL class.

Reminders and To – Do's



Information

1. Complete 1 math lesson per day.
2. Check your WebMail every day
3. Be prepared to spend 4 - 6 hours per day on schoolwork.
4. Remind your Learning Coach to take daily attendance

What to do

1. Go to your Planner in Connexus to find the math lesson for the day
2. Go to Connexus to find WebMail
3. Complete lessons for the day from your Planner. Do not get behind on lessons.
4. Have your Learning Coach log into Connexus daily.

Reminders and To – Do's



Information

5. Go to the Message Board first for information about our math class.

6. Contact Mr. Elizondo for math questions.

Remember: You need at least 2 phone calls with Mr. Elizondo per semester.

What to do

6. Call (559) 549 - 3244 and leave a voicemail if call is not answered.

Make an appointment at:
<https://elizondo.youcanbook.me>

Send a WebMail

U5L4 – California Common Core State Standards

- HSS-ID.A.1: Represent data with plots on the real number line (dot plots, histograms, and box plots).

U5L4 - Vocabulary



- frequency
- frequency table
- histogram
- cumulative
frequency table

U5L4 - Objectives



- Make and interpret frequency tables and histograms

U5L4 - Introduction



- There are many ways to organize and visually display data. Sometimes it is helpful to organize numerical data into intervals.

- The **frequency** of an interval is the number of data values in that interval. A **frequency table** groups a set of data values into intervals and shows the frequency for each interval. Intervals in frequency tables do not overlap, do not have any gaps, and are usually of equal size.

U5L4 – Making a Frequency Table



Baseball The numbers of home runs by the batters in a local home run derby are listed below. What is a frequency table that represents the data?

7 17 14 2 7 9 5 12 3 10 4 12 7 15

Home Run Results

Home Runs	Frequency
2–5	4
6–9	4
10–13	3
14–17	3

The minimum data value is 2 and the maximum is 17. Intervals of 4 seem reasonable. In the first column of the table, list the intervals. Count the number of data values in each interval and list the number in the second column.

U5L4 – Making a Histogram



A **histogram** is a graph that can display data from a frequency table. A histogram has one bar for each interval. The height of each bar shows the frequency of data in the interval it represents. There are no gaps between bars. The bars are usually of equal width.

Television The data below are the numbers of hours per week a group of students spent watching television. What is a histogram that represents the data?

7 10 1 5 14 22 6 8 0 11 13 3 4 14 5

Use the intervals from the frequency table for the histogram. Draw a bar for each interval. Make the height of each bar equal to the frequency of its interval. The bars should touch but not overlap. Label each axis.

Watching Television

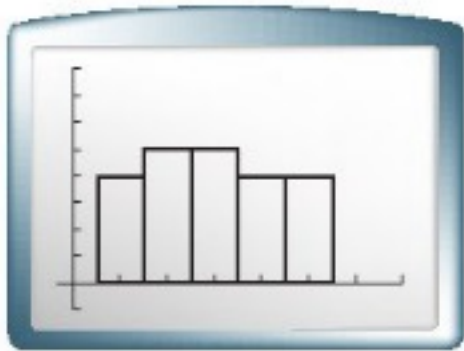
Hours	Frequency
0–5	6
6–11	5
12–17	3
18–23	1



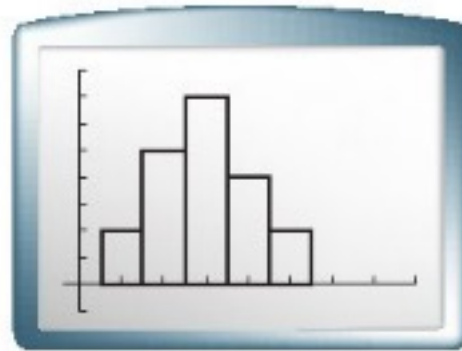
U5L4 - Making a Histogram



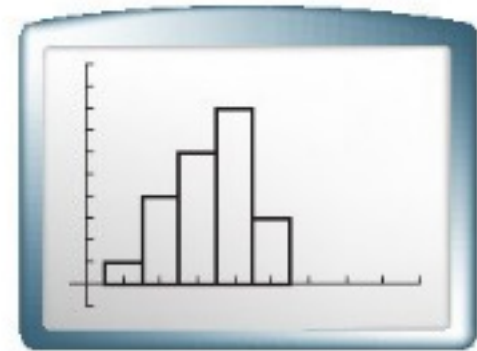
You can describe histograms in terms of their shape. Three types are shown below.



If the bars are roughly the same height, the histogram is *uniform*.



If a vertical line can divide the histogram into two parts that are close to mirror images, then the histogram is *symmetric*.

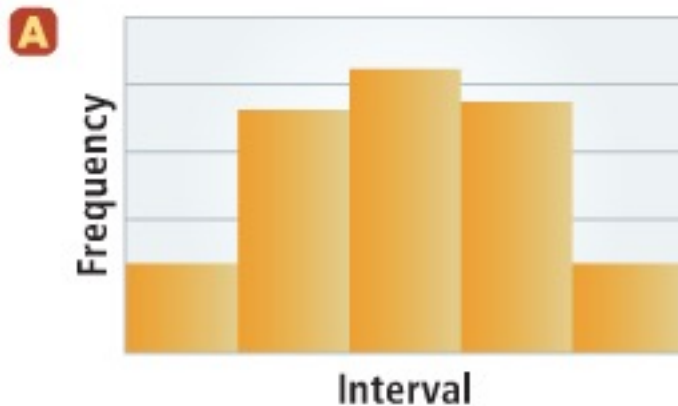


If the histogram has one peak that is not in the center, the histogram is *skewed*.

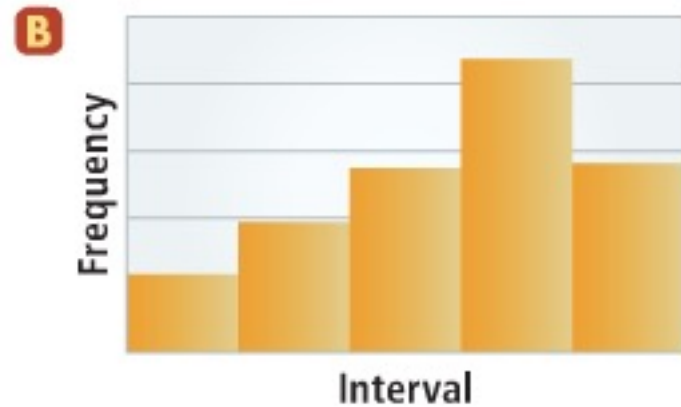
U5L4 – Interpreting Histograms



Is each histogram *uniform*, *symmetric*, or *skewed*?



This histogram is symmetric because the halves are close to mirror images.



This histogram is skewed because the peak is not in the center.

U5L4 - Making a Cumulative Frequency Table



A **cumulative frequency table** shows the number of data values that lie in or below a given interval. For example, if the cumulative frequency for the interval 70–79 is 20, then there are 20 data values less than or equal to 79.

Text Messaging The numbers of text messages sent on one day by different students are shown below. What is a cumulative frequency table that represents the data?

17 3 1 30 11 7 1 5 2 39 22 13 2 0 21 1 49 41 27 2 0

Step 1 Divide the data into intervals. The minimum is 0 and the maximum is 49. You can divide the data into 5 intervals.

Step 2 Write the intervals in the first column. Record the frequency of each interval in the second column.

Step 3 For the third column, add the frequency of each interval to the frequencies of all the previous intervals.

Daily Text Messaging

Number of Text Messages	Frequency	Cumulative Frequency
0–9	11	11
10–19	3	14
20–29	3	17
30–39	2	19
40–49	2	21

Callouts showing cumulative frequency calculations:

- 11 + 3 = 14
- 14 + 3 = 17
- 17 + 2 = 19
- 19 + 2 = 21

Questions?



- Check the Message Board first
- Send a WebMail
- You can also make an appointment at <https://elizondo.youcanbook.me>
- You can also call me at (559) 549-3244. If I'm not available to answer your call, please leave a voicemail with your full name and phone number.

U5L4 - Review (what we learned from this LL)



- How to make a Frequency Table
- How to make a Histogram
- How to interpret a Histogram
- How to make a Cumulative Frequency Table

U5L4 - Review Problems



Use the data to make a frequency table.

1. runs per game: 5 4 3 6 1 9 3 4 2 2 0 7 5 1 6

1. Put numbers in numerical order
2. Determine the appropriate interval
3. Figure out the frequency in each interval
4. Create the chart

Runs per game

Runs	Frequency
0-2	5
3-4	4
5-6	4
7-9	2

U5L4 - Review Problems



Use the data to make a histogram.

number of pages: 452 409 355 378 390 367 375 514 389 438 311 411 376

1. Put numbers in numerical order
2. Determine the appropriate interval
3. Figure out the frequency in each interval
4. Create the frequency table
5. Create the histogram

Number of pages

Pages	Frequency
311-361	2
362-411	8
412-461	2
462-514	1



U5L4 - Review Problems



Use the data to make a cumulative frequency table.

3. call length (min): 3 5 12 39 12 3 15 23 124 2 1 1 7 19 11 6

Call Lengths

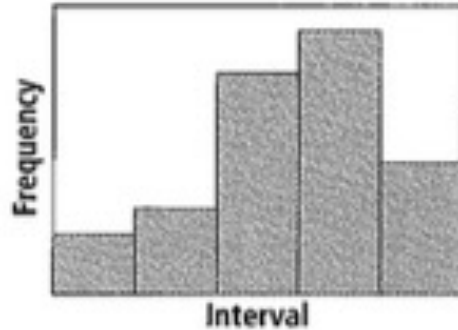
Minutes	Frequency	Cumulative Frequency
0-10	8	8
11-20	5	13
21-30	1	14
30+	2	16

U5L4 - Review Problems



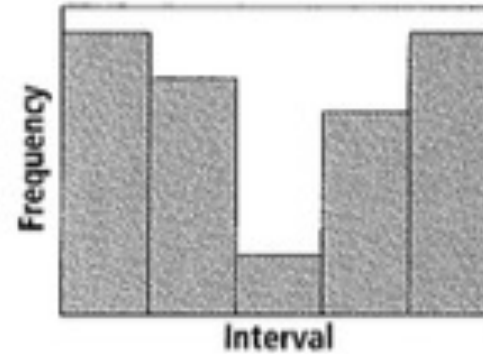
Tell whether each histogram is *uniform*, *symmetric*, or *skewed*.

4.



Skewed

5.



Symmetric