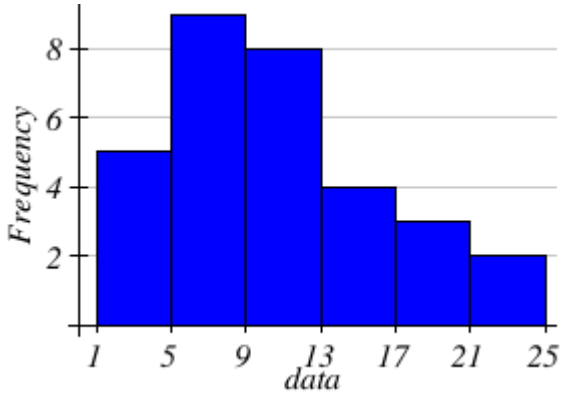
MyOpenMath Week #2 Homework Example

HW #2 Example Problems

1. (1 pts)



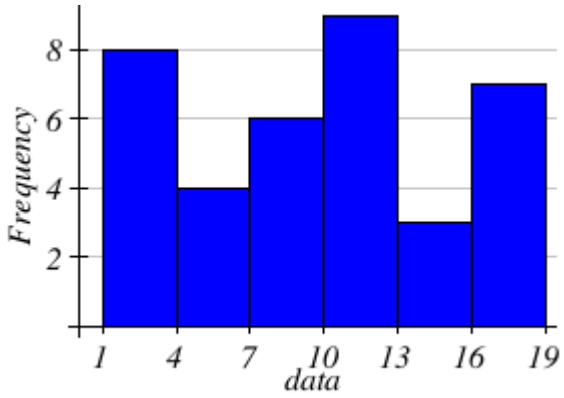
Based on the histogram above, what is the class width?

Class width = (5 – 1) = 4

What is the sample size?
Look at the height of each bar, and add them together to get the total sample size.

Sample size = 5 + 9 + 8 + 4 + 3 + 2 = 31

2. (1 pts)



Based on the histogram above, what is the frequency of the class containing the value 17
17 is contain in the class 16 - 19. Look at the height of the bar it is 7.

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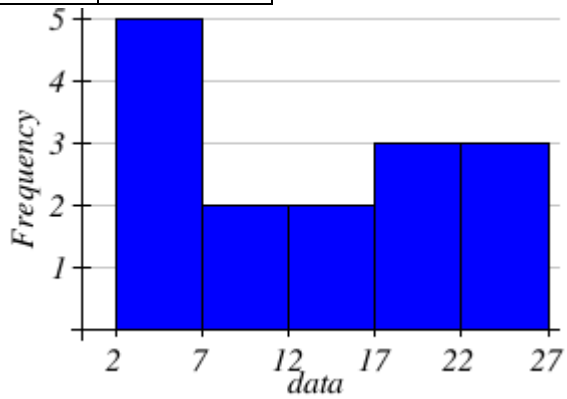
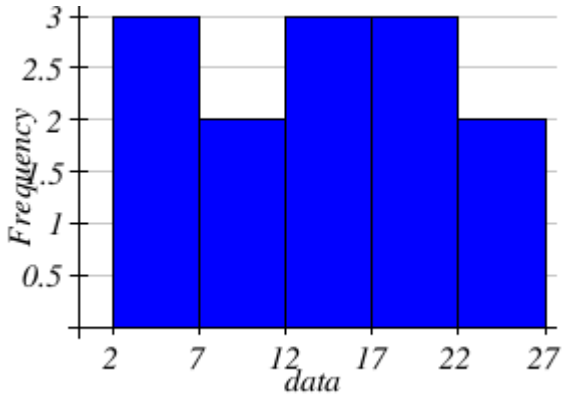
3. (1 pts)

Identify the histogram for the frequency distribution below.

Data	Frequency
2-6	3
7-11	2
12-16	3
17-21	3
22-26	2



Eliminate since the first class is in this chart is 5.



Correct since each bar height corresponds to the frequency in the table above.

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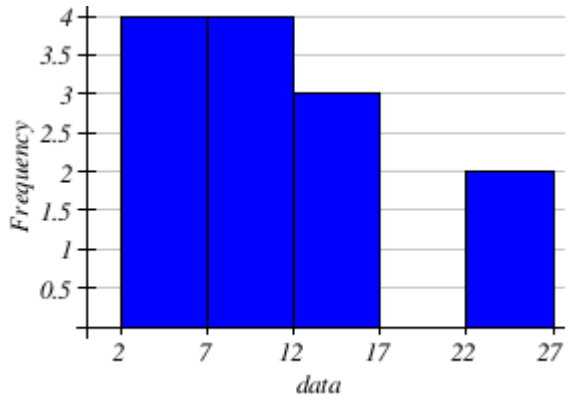
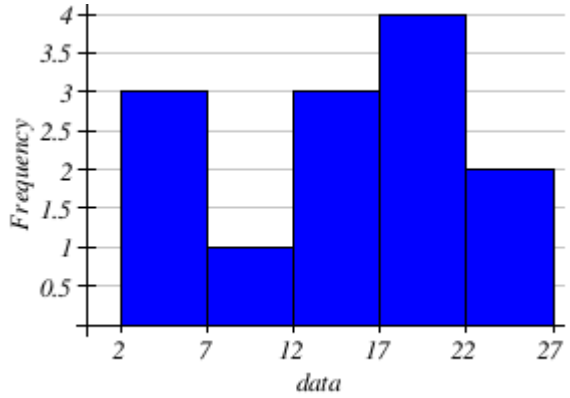


Eliminate since the second bar height is not equal to 2.



Eliminate since the second bar height is not equal to 2.

4. (1 pts)

Question 1.40

The number of times per week **one hundred sixty-four** adults with gum disease used floss before their diagnosis is listed below. Complete the frequency table, and round the relative and cumulative frequencies to 4 decimal places. (Relative Frequency and Cumulative Relative Frequency is rounded to the nearest 4 decimal places. The Frequency and Cumulative Frequency is rounded to whole numbers.)

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# of Flossing per Week	Frequency	Cumulative Frequency	Relative Frequency	Cumulative Relative Frequency
0	29			
1	29			
2	8			
3	13			
4	17			
5	18			
6	20			
7	30			
Total	164			

Copy the table to an Excel Spreadsheet to complete the frequency table.

# of Flossing per Week	Frequency	Cumulative Frequency	Relative Frequency	Cumulative Relative Frequency
0	29	29	0.1768	0.1768
1	29	58	0.1768	0.3537
2	8	66	0.0488	0.4024
3	13	79	0.0793	0.4817
4	17	96	0.1037	0.5854
5	18	114	0.1098	0.6951
6	20	134	0.122	0.8171
7	30	164	0.1829	1
Total	164			

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Cumulative Frequencies

a) What percent of adults flossed six times per week? %

Under the # of Flossing per week look and find 6 then look over to the column relative frequency.

0.122 or 12.2%

b) What percent flossed at most three times per week? %

Under the # of Flossing per week look and find 3. Then look over to the cumulative relative frequency.

0.4817 or 48.17%

5. (1 pts)

The list below shows the number of new accounts opened by employees of a bank over the last year.

Table 1- Data Values

65	70	86	28
6	75	26	48
76	76	33	3
32	34	87	53
43	37	78	89
15	57	66	97
86			

Copy to clipboard

Use the data to find the class frequency for the class interval 0-24

Look for values in the table that are between 0 and 24. Count the number of values between 0 and 24, the frequency is 3.

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6. (1 pts)

95 part-time students were asked how many courses they were taking this term. Complete the frequency distribution table: round relative Frequency and Cumulative Relative Frequency to four decimal places.

No. of Classes taken	Freq	Cumulative Frequency	Relative Frequency	Cumulative Relative Frequency
1	20			
2	34			
3	41			
Total	95			

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Copy the table into an Excel Spreadsheet and complete the table.

No. of Classes taken	Freq	Cumulative Frequency	Relative Frequency	Cumulative Relative Frequency
1	20	20	0.2105	0.2105
2	34	54	0.3579	0.5684
3	41	95	0.4316	1
Total	95			

What percent of students take exactly two courses? %

Look for 2 under the No. of Classes taken. Then move over to the Relative Frequency column. The answer is .3579 or 35.79%

What percent of students take one or two courses? %

Look for 2 under the No. of Classes taken. Then move over to the Cumulative Relative Frequency column. The answer is .5684 or 56.84

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7. (1 pts)

Suppose you have a dataset of 92 values between 0 and 17. If you want to group the data, how many classes would you use?

In your Excel Spreadsheet enter the following formula.
= RoundUp(log(92)/log(2),0)
The answer is seven (7) classes.

8. (1 pts)
Given the 96 data points below determine the number of classes

745	667	501	116	123	661	884	515	301	863
252	560	709	809	295	362	447	125	590	749
538	446	144	823	187	376	419	119	819	143
202	225	468	336	884	156	284	548	594	219
295	391	403	617	484	533	260	663	394	721
608	254	568	593	617	362	207	418	499	894
895	374	208	513	891	195	680	646	846	564
837	798	385	839	773	294	396	758	626	635
116	102	581	386	426	513	724	574	176	896
324	153	308	550	574	204				

a) the number of classes is

In your Excel Spreadsheet enter the following formula.
=ROUNDUP(LOG(96)/LOG(2), 0)
7

9. (1 pts)

Based on the 98 data points below compute the a) the number of classes, b) the class width, c) Using the minimum value to create the frequency table.

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101.0	101.0	101.1	101.5	103.0	103.4	103.7	104.6
104.9	105.9	107.0	107.5	107.7	107.8	108.8	108.9
109.3	110.1	110.5	111.3	111.7	112.1	112.3	112.8
113.4	113.6	113.6	113.9	114.8	115.2	115.5	117.0
117.5	117.7	118.0	118.1	118.2	119.0	119.9	120.8
121.2	121.8	122.5	122.9	123.9	124.1	124.4	125.2
125.3	126.0	126.0	126.6	127.0	127.1	127.3	128.0
128.4	128.7	129.2	129.4	130.3	130.6	132.1	132.2
132.3	133.2	133.2	133.4	133.5	134.2	135.8	136.3
136.8	137.1	137.5	137.8	138.5	139.0	139.2	139.9
140.3	142.3	142.6	142.6	142.8	143.4	143.6	144.6
144.6	144.8	145.2	145.8	146.0	147.9	148.5	148.6
149.3	149.6						

first class start value = 101
last class end value = 150.35

Copy to R vector Copy to Clipboard

Copy the data from the Clipboard to an Excel Spreadsheet. Then determine the # of classes.

In cell D1, enter the text # of classes. Then hit the Enter key.

In cell E1, enter the formula =ROUNDUP(log(98)/log(2), 0) and hit the Enter key.

In cell D2, enter the text Maximum, and hit the Enter key.

In cell E2, enter the value 150.35, the last class end value. Then hit the Enter key.

In cell D3, enter the text Minimum, and hit the Enter key.

In cell E3, enter the value 101, the first class start value. Then hit the Enter key.

In cell D4, enter the formula =(E2 – E3)/E1 and hit the Enter key.

a) The number of classes **The number of classes is seven (7).**

b) The class width is

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The class width is 7.05.

c) Complete the frequency table below.

Run the Data Analysis Tool on the Excel Data Set. Use the data and the ending column to create a start to the Frequency table. Then use the instructions in the lecture notes for this section (Section 1.3).

Start	*End*	*Frequency*	Cum Freq	Rel Freq	Cum Rel Freq
101	108.05	14	14	0.1429	0.1429
108.05	115.1	15	29	0.1531	0.2959
115.1	122.15	13	42	0.1327	0.4286
122.15	129.2	17	59	0.1735	0.602
129.2	136.25	12	71	0.1224	0.7245
136.25	143.3	14	85	0.1429	0.8673
143.3	150.35	13	98	0.1327	1
	Total	98			

10. (1 pts)

The number of courses fifty-eight part-time students took is summarized below. Fill in the boxes with the correct answer.

Frequency Table

# of Courses	Frequency	Relative Frequency Round to 4 decimal places	Cumulative relative frequency Round to 4 decimal places
1	23	0.3966	0.3966
2	21	21/58 = 0.3621	=(23+21)/58 = 0.7586
3	58-23-21 = 14	14/58 = 0.2414	=(23+21+14)/58 = 1.0000
Total	58		

b) What percent of students take exactly three courses? % (Round to two decimal places)

0.2414 or 24.14%

c) What percent of student take two or three courses? % (Round to two decimal places)

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(21+14)/58 = 0.6034
60.34%

11. (1 pts)

Forzzy magazine published data on the best small firms last year. These were firms which had been publicly traded for at least a year, have a stock price of at least $5 per share, and have reported annual revenue between $5 million and $1 billion. The table below shows the ages of the chief executive officers for the first **90** ranked firms.

Frequency Table

Age	Frequency	Relative Frequency	Cumulative Frequency
40-44	17	**=17/90 =0.1889**	**17**
45-49	12	**=12/90 = 0.1333**	**=(17+12) = 29**
50-54	13	**=13/90 = 0.1444**	**=(29+13) =42**
55-59	11	**=11/90 = 0.1222**	**=(42+11) =53**
60-64	13	**=13/90 = 0.1444**	**=(53+13) = 66**
65-69	15	**=15/90 = 0.1667**	**=(66+15) = 81**
70-74	9	**=9/90 = 0.1000**	**=(81+9) =90**
Total	**90**		

12. (1 pts)

Ages	Number of students
15-18	10
19-22	4
23-26	7
27-30	3
31-34	9
35-38	10

Based on the frequency distribution above, find the relative frequency for the class with lower class limit 27

First, find the total in the sample. Total the Number of students column, 43.

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Find the class that starts with 27

27-30 3 students

Relative Frequency = %

=3/43 =0.0698 or .070 or 7.0%

Give your answer as a percent, rounded to one decimal place

13. (1 pts)

Ages	Number of students
15-18	8
19-22	2
23-26	7
27-30	3
31-34	6
35-38	5

Based on the frequency distribution above, find the cumulative frequency for the class with lower-class limit 27

Cumulative Frequency =

Add the number of students from Ages 15-18 through 27-30.

=8+2+7+3 = 20

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Key - Form 1

1. 4 ~ 31
2. 7

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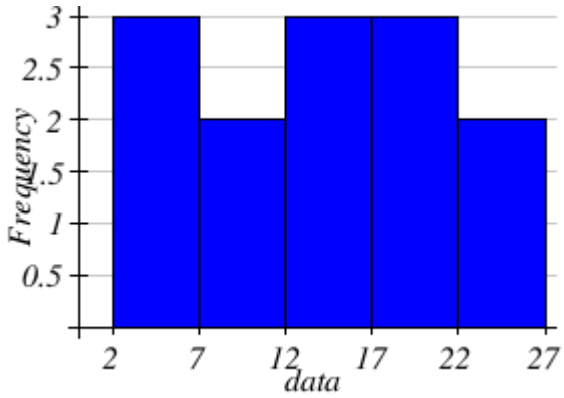

3.

4. 29 ~ 58 ~ 66 ~ 79 ~ 96 ~ 114 ~ 134 ~ 164 ~ 0.1768 ~ 0.1768 ~ 0.0488 ~ 0.0793 ~ 0.1037 ~ 0.1098 ~ 0.122 ~ 0.1829 ~ 0.1768 ~ 0.3537 ~ 0.4024 ~ 0.4817 ~ 0.5854 ~ 0.6951 ~ 0.8171 ~ 1 ~ 12.2 ~ 48.17
5. 3
6. Cumulative Frequency = Prior Cumulative Frequency + Frequency;
   Relative frequency = Frequency/Total Frequency;
   Cumulative Relative Frequency = Prior Relative Frequency + Relative Frequency;
   Percentage of students that take exactly two courses: relative frequency class 2.
   Percentag students take one and two course: cumulative relative frequency for class 2
7. 7
8. Find the smallest integer greater than or equal to log(# of data points)/log(2).
9. 7 ~ 7.05 ~ 101 ~ 108.05 ~ 14 ~ 14 ~ 0.1429 ~ 0.1429 ~ 108.05 ~ 115.1 ~ 15 ~ 29 ~ 0.1531 ~ 0.2959 ~ 115.1 ~ 122.15 ~ 13 ~ 42 ~ 0.1327 ~ 0.4286 ~ 122.15 ~ 129.2 ~ 17 ~ 59 ~ 0.1735 ~ 0.6020 ~ 129.2 ~ 136.25 ~ 12 ~ 71 ~ 0.1224 ~ 0.7245 ~ 136.25 ~ 143.3 ~ 14 ~ 85 ~ 0.1429 ~ 0.8673 ~ 143.3 ~ 150.35 ~ 13 ~ 98 ~ 0.1327 ~ 1.0000
10. 14 ~ 0.3621 ~ 0.2414 ~ 0.3966 ~ 0.7586 ~ 1.0000 ~ 24.14 ~ 60.34
11. 0.1889 ~ 0.1333 ~ 0.1444 ~ 0.1222 ~ 0.1444 ~ 0.1667 ~ 0.1 ~ 17 ~ 29 ~ 42 ~ 53 ~ 66 ~ 81 ~ 90
12. 7
13. 20
