

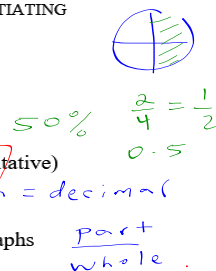
**Lesson 5**

QUANTIFYING A DISTRIBUTION OF RAW DATA INTO A FREQUENCY CHART. DIFFERENTIATING COUNTING BETWEEN HISTOGRAM, BAR GRAPH, AND CIRCLE GRAPH.

**Recap:**

sec 3

- How to Collect Data (creating a distribution)
- Describing a Distribution
  - Variable type (discrete quantitative, continuous qualitative, qualitative)
  - Central tendency (mean, mode)
- Representing a Distribution with a Frequency and a Relative Frequency Chart
- Representing a Distribution Described in a (Relative) Frequency Chart with Graphs



**TODAY**

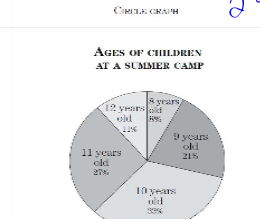
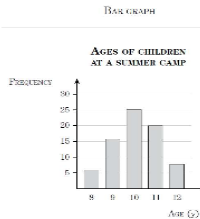
- Differentiating between a Pie Chart and a Histogram that Represents a Distribution Described in a (Relative) Frequency Chart. Quantifying a Distribution of Raw Data.



**Example:** Note the following charts and which types of graphs we choose to represent them.

AGES OF CHILDREN AT A SUMMER CAMP

AGE (y)	FREQUENCY	RELATIVE FREQUENCY (%)
8	6	8
9	16	21
10	25	33
11	20	27
12	8	11
TOTAL	75	100

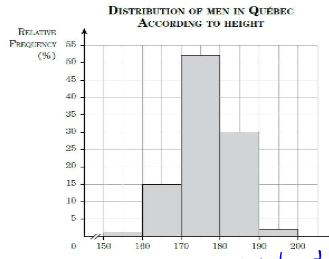


discrete quantitative use bar graph/circle graph

Recall: frequency: # of ppl or things  
ex: there are 6 ppl who are 8 years old  
relative freq (%)  
ex: 8% of the children are 8 yrs old.

DISTRIBUTION OF MEN IN QUÉBEC ACCORDING TO HEIGHT

HEIGHT (cm)	MEN
[150, 160[	1%
[160, 170[	15%
[170, 180[	52%
[180, 190[	30%
[190, 200[	2%



Definition homework pg 93/95 q 4.1/q 4.2

LS ho!

continuous quantitative use histogram

classes/interval / reads, the heights range from 150 cm to 160 cm not included.

ex. [150, 160[ cm

closed bracket includes the element in the class

open brackets exclude the element in the interval

ex [150, 160] means all # in between 150 and 160

150.1 ∈ [150, 160[

150.11 ∈ [150, 160[

150.111

150.1111

(in the classes/interval) 159.999999

Quantifying a Distribution of Raw Data  
Counting

**Question 1:** Read the below distribution, represent it in the frequency chart, and answer the following questions.

A hospital has recorded the weight of 25 recent newborns. Here is the data that was collected expressed in grams:

3155, 3185, 2150, 2255, 3010, 3030, 2770, 2890, 2895, 3035, 3560, 3740, 2895, 3220, 3230, 3275, 3405, 3885, 3105, 3130, 2315, 2580, 2590, 2745, 3530

a) What does the variable in this distribution represent?

the weight in grams.

TABLE 1.8  
DISTRIBUTION OF 25 NEWBORNS ACCORDING TO WEIGHT

WEIGHT (g)	FREQUENCY
[2000, 2400[	3
[2400, 2800[	4
[2800, 3200[	10
[3200, 3600[	6
[3600, 4000[	2
TOTAL	25

{1, 2, 3}  
[1, 2, 3]  
1.5 €

b) Is the variable discrete quantitative, continuous quantitative, or qualitative?

whole #  
IR

**Question 2:** Read the same distribution now represented in a histogram, and answer the following questions

a) What is the modal class?

[2800, 3200]

b) How many newborns weigh between 2800g and 3200g not included?

10 babies

c) How many newborns weigh less than 2800g?

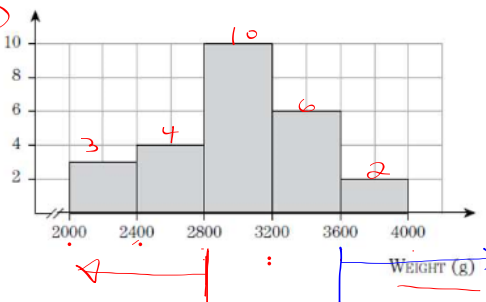
7 babies

d) Your friend claims it's rare for a newborn to weigh 3600g or more. Based on the provided data, is your friend's statement true?

not common / not frequent  
low frequency

Yes, because there's 2 babies

DISTRIBUTION OF 25 NEWBORNS ACCORDING TO WEIGHT



data w highest frequency.

**Question 3:** Read the below distribution, represent it in the frequency chart, and answer the following questions.

Forty people are asked how long it takes them to drive to work in the morning. Here are their answers rounded to the nearest minute.

49	16	27	57	15	12	39	46	55	29
25	17	45	58	37	35	44	64	45	25
28	40	35	53	49	65	30	46	32	15
46	52	30	38	42	28	25	20	46	36

a) What does the variable in this distribution represent?

DISTRIBUTION OF RESPONDENTS ACCORDING TO THE TIME IT TAKES THEM TO DRIVE TO WORK

TIME (min)	FREQUENCY	RELATIVE FREQUENCY (%)
[10, 20[		
[20, 30[		
[30, 40[		
[40, 50[		
[50, 60[		
[60, 70[		

b) Is the variable discrete quantitative, continuous quantitative, or qualitative?

Do question 3 - 5 in handout!

+ Do circle graph handout from yesterday.

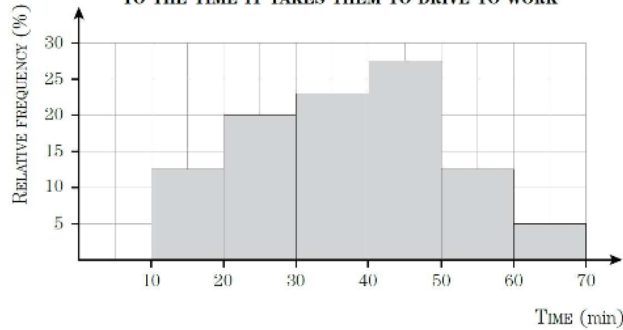
**Question 4:** Read the same distribution now represented in a histogram, and answer the following questions

a) What is the modal class?

b) What percent of respondents have to drive 20 mins to 30 mins not included to get to work?

c) Your friend says it takes most of the respondents more than 60 mins to get to work. Is this true or false? Justify your answer with the data.

DISTRIBUTION OF RESPONDENTS ACCORDING TO THE TIME IT TAKES THEM TO DRIVE TO WORK



**Question 5:** Data was collected on 20,000 women in Quebec. Their varying height is described in the below relative frequency chart. Read it and answer the following questions.

a) What does the variable in this distribution represent?

**Percentage Distribution of Women in Quebec According to Height**

b) Is the variable discrete quantitative, continuous quantitative, or qualitative?

c) What is the modal class?

d) What is the most common height range among the women?

e) How many women have a height between 140 cm to 150 cm not included?

f) How many women have a height between 150 cm to 160 cm not included?

g) How many women are taller than 170 cm?

HEIGHT (cm)	WOMEN %
[140, 150[	3%
[150, 160[	31%
[160, 170[	50%
[170, 180[	15%
[180, 190[	1%
[190, 200[	-
TOTAL	100%

$$\% = \frac{\text{Part}}{\text{Total}} \times 100\%$$

$$3\% = \frac{x}{20000} \times 100\%$$

$$0.03 = \frac{x}{20000}$$

Circles!

20,000 x  
600 Women = x