



7th
Basic

8th
Advanced

Helping With Math

USA
GRADES

Histogram

Suitable for students
aged 11-13



This pack is suitable for learners aged 11-13 years old or 7th and 8th graders (USA). The content covers fact files and relevant basic and advanced activities involving Histogram.



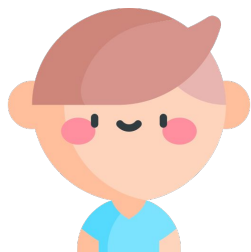
- ✓ A **Histogram** is a bar graph that shows the frequency data occur within a certain interval.
- ✓ In a histogram, the bars are always vertical, the width of each bar is based upon the size of the interval it represents, and there are no gaps between adjacent bars.

When to use a Histogram?

- ❖ You want to see the shape of the data's distribution.
- ❖ Seeing whether a process change has occurred from one time period to another.
- ❖ Determining whether the outputs of two or more processes are different.



STEPS IN CONSTRUCTING HISTOGRAM GRAPH



Hi Dr. can I ask how to make a histogram?

Hello, Gino! Do you know that we also use histogram in our profession? I will explain it to you the steps below on **how to make histogram.**



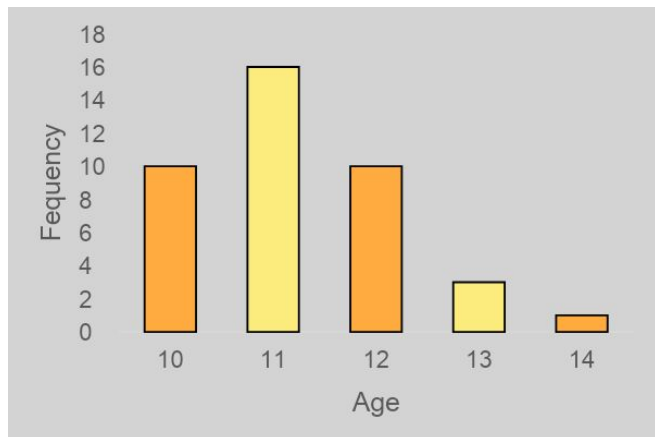
1. Make a frequency distribution table for the given data.
2. On the vertical axis, place frequencies. Label the axis "frequency".
3. On the horizontal axis, place the lower value of each interval to the lower value of the next interval.
4. The height of each bar should be equal to the frequency of its corresponding interval.

EXAMPLE:

Ages of Grade 7 students
as of September 1, 2021

13, 14, 11, 11, 12, 13, 12, 11, 12, 11,
10, 11, 11, 11, 11, 11, 11, 10, 11, 12,
12, 12, 12, 12, 10, 11, 12, 10, 10, 11,
11, 10, 10, 11, 13, 12, 10, 11, 10, 10

Age	Frequency
10	10
11	16
12	10
13	3
14	1



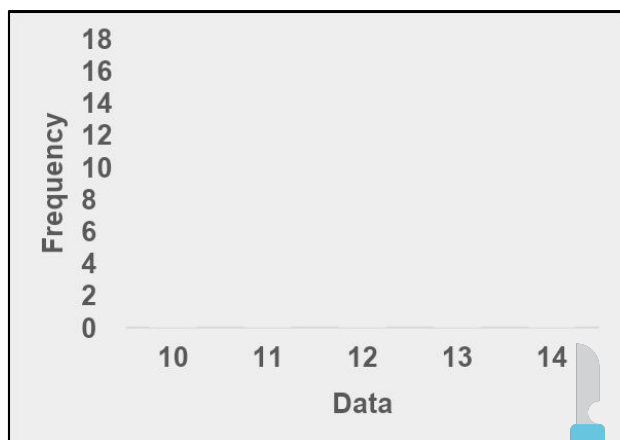
It shows that students from the grade 7 has different ages.



LET'S PRACTICE!

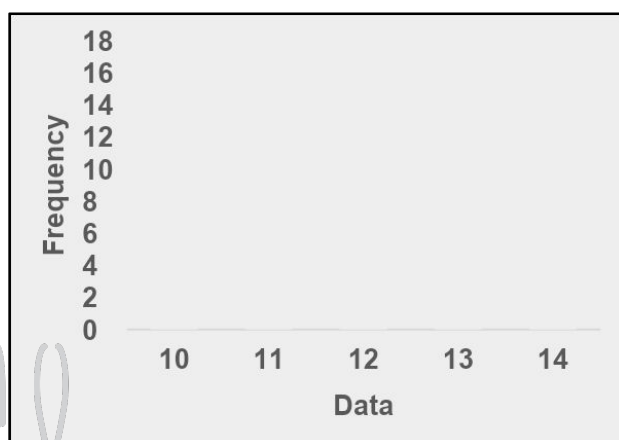
1.)

12, 13, 11, 11, 13, 13, 12, 11,
12, 11, 10, 11, 10, 11, 14, 12,
11, 10, 11, 12, 12, 13, 11, 10,
10, 11, 12, 10, 10, 11, 11, 10
10 10 12 11 10 13 10 10



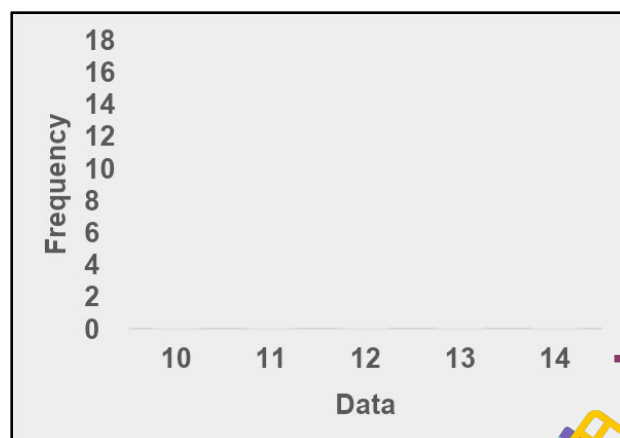
2.)

12, 13, 11, 11, 13, 13, 12, 11,
12, 14, 14, 10, 10, 11, 14, 12,
11, 10, 11, 12, 11, 10, 11, 10,
10, 11, 10, 10, 12, 11, 15, 10,
10, 10, 14, 11, 10, 13, 10, 15



3.)

12, 13, 11, 11, 13, 10, 12, 11,
12, 11, 10, 11, 10, 11, 14, 12,
11, 10, 11, 10, 12, 13, 11, 13,
10, 11, 10, 11, 10, 11, 13, 10,
10, 10, 12, 11, 11, 13, 10, 10



4.)

12, 13, 11, 11, 13, 13, 12, 11,
12, 11, 10, 12, 10, 12, 14, 12,
11, 10, 11, 12, 12, 13, 11, 10,
10, 11, 13, 10, 10, 12, 11, 10,
12, 10, 10, 11, 10, 13, 10, 10

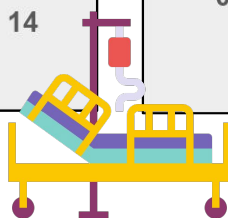
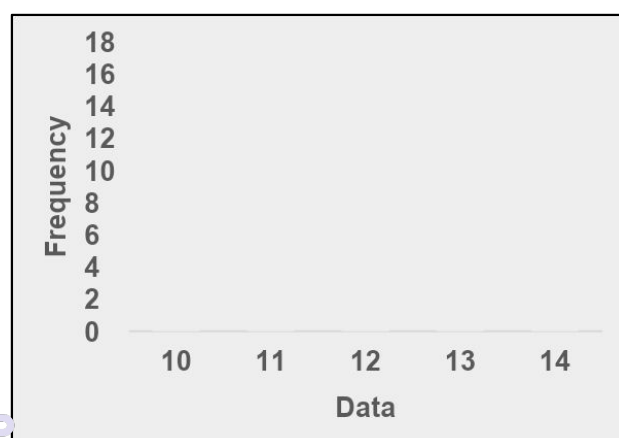


TABLE OF ACTIVITIES

Ages 11-12 (Basic)		<u>7th Grade</u>
1	Wheelchair	
2	Somebody Call 911	
3	Doctor's Prescription	
4	Healthy Foods	
5	Hospital Bills	
Ages 12-13 (Advanced)		<u>8th Grade</u>
6	Medical Team	
7	Nursery Room	
8	Stethoscope	
9	Symptoms	
10	A Day In the Life of a Doctor	



WHEELCHAIR

G7
Basic

Help your mom choose the best wheelchair for her. To do that, choose the correct histogram based on the given data below. Write your answer on the space provided.

1. 2, 1, 2, 3
1, 2, 4, 2
3, 3, 1, 1
4, 1, 1, 1

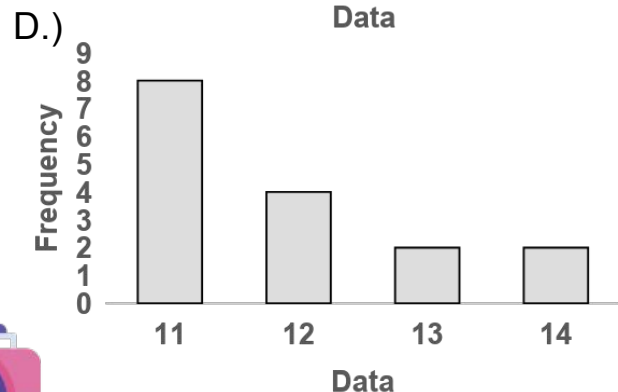
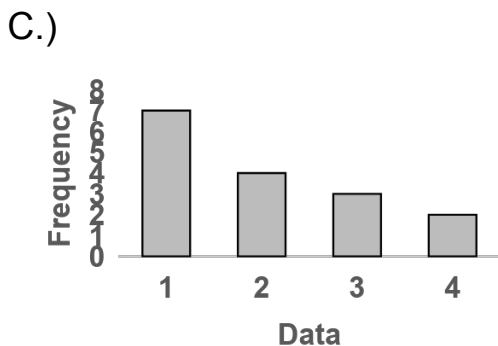
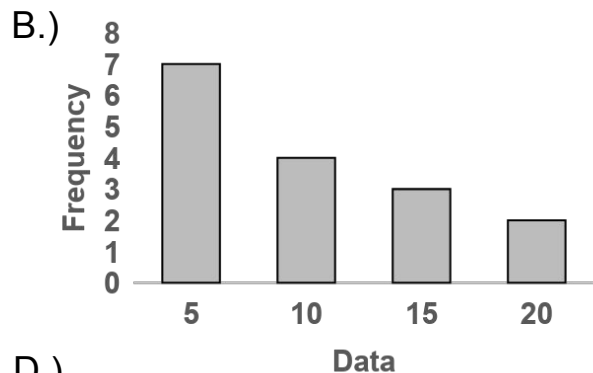
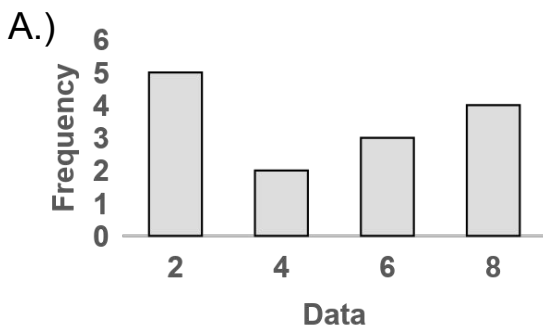
2.) 5, 10, 10, 15
10, 20, 5, 5
10, 5, 15, 15
20, 5, 5, 5



3.) 4, 2, 6, 8
8, 2, 2, 4
6, 8, 6, 2
8, 8, 2, 2

4.) 12, 11, 13, 11
11, 14, 12, 14
13, 11, 12, 11
11, 12, 11, 11

1.) _____
2.) _____
3.) _____
4.) _____



SOMEBODY CALL 911

G7
Basic

Carlo needs to go in the hospital as soon as possible. He asked you to call the 911 to ask for help. You can only call the emergency hotline if you can answer the problems below. Write your answer on the space provided.

1.)

1, 3, 5, 3, 1, 7, 3, 3

Data	Frequency
1-3	
4-6	
7-9	



2.)

2, 4, 6, 10, 10, 10, 12, 5, 1, 4, 4, 2, 4, 10, 2, 12, 14, 16

Data	Frequency
0-4	
5-8	
9-12	
13-16	

3.)

1, 3, 6, 7, 10, 9, 8, 4, 3, 2, 2, 1, 7, 10

Data	Frequency
1-3	
4-6	
7-9	
10-12	

4.)

20, 11, 12, 10, 16, 17, 18, 20, 23, 25, 11, 12, 10, 13, 15, 19, 10, 11, 15

Data	Frequency
10-13	
14-17	
18-21	
22-25	



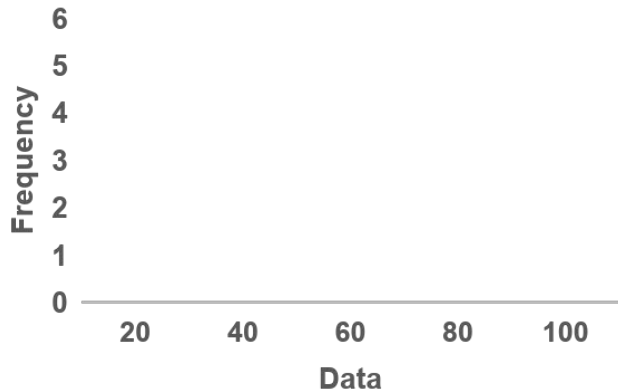
DOCTOR'S PRESCRIPTION

G7
Basic

The doctor will give you your medicine prescription if you managed to illustrate the histogram of the data below. Illustrate the histogram on the given graph.

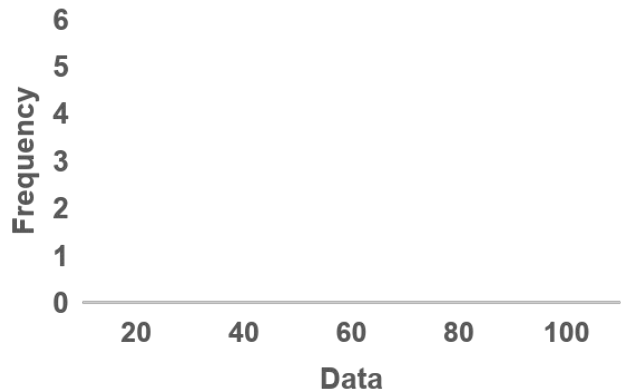
1.)

17, 19, 13, 7, 14,
27, 57, 69, 79,
77, 86



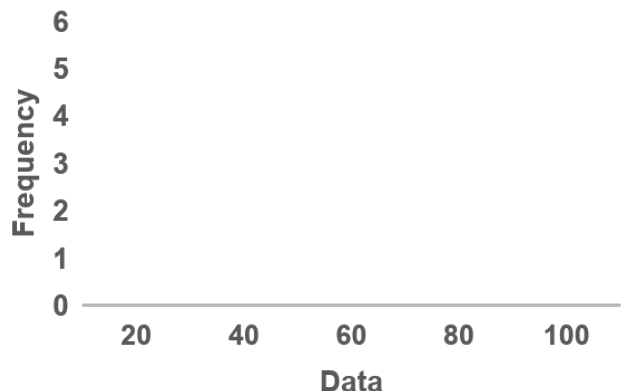
2.)

16, 5, 13, 12, 31, 32,
24, 47, 42, 77, 67,
60, 87, 80, 93, 87



3.)

19, 38, 37, 23, 31,
34, 59, 42, 55, 43,
42, 74, 67, 71, 76,
60, 90



HEALTHY FOODS

G7
Basic

Carlo needs to undergo an operation. In preparation, he needs to eat healthy foods. Choose what healthy food should he eat by choosing the letter of the correct answers below. Write the letter on the space provided.

1. In a histogram, the _____ are always vertical.

- a. Graph
- b. Bars
- c. Data



3. In a histogram, the _____ of each bar should be equal to the frequency of its corresponding interval.

- a. Width
- b. Height
- c. Size



2. Given below are the scenarios when to use a histogram, EXCEPT?

- a. You want to see the circulation of the data's distribution.
- b. Seeing whether a process change has occurred from one time period to another.
- c. Determining whether the outputs of two or more processes are different.



4. _____ is a bar graph that shows the frequency data occur within a certain interval.

- a. Data Distribution
- b. Frequency Table
- c. Histogram

5. In making a histogram, label the vertical axis as _____.

- a. Data
- b. Frequency
- c. Histogram

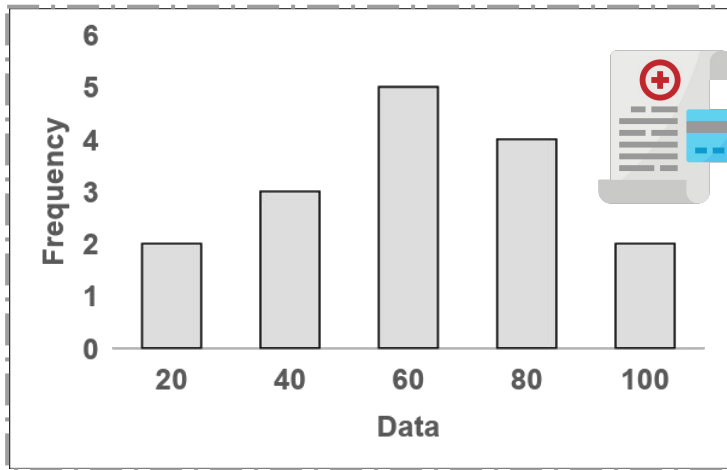
- 1.) _____
- 2.) _____
- 3.) _____
- 4.) _____
- 5.) _____



HOSPITAL BILLS

G7
Basic

Your friend had a surgery. He needs to pay his hefty hospital bills. Help him earn money by answering the following. Complete the table below based on the given histogram. Write your answers on the space provided.

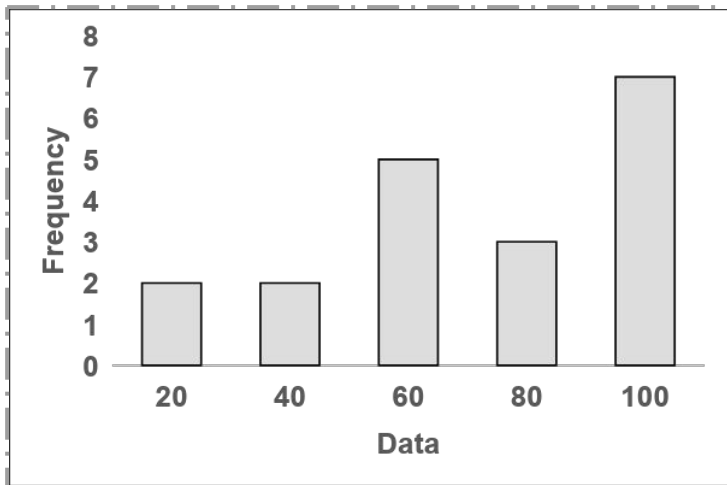
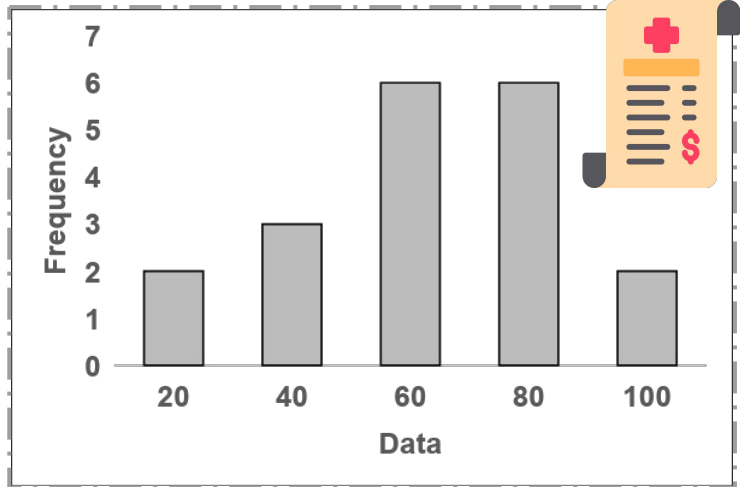


1.)

Data	Frequency

2.)

Data	Frequency



3.)

Data	Frequency



MEDICAL TEAM

G8
Advanced

The medical team needs to decide what is the correct histogram for the given data below. As a future doctor, you can help them decide. Choose the letter of your answer and write it on the space provided.

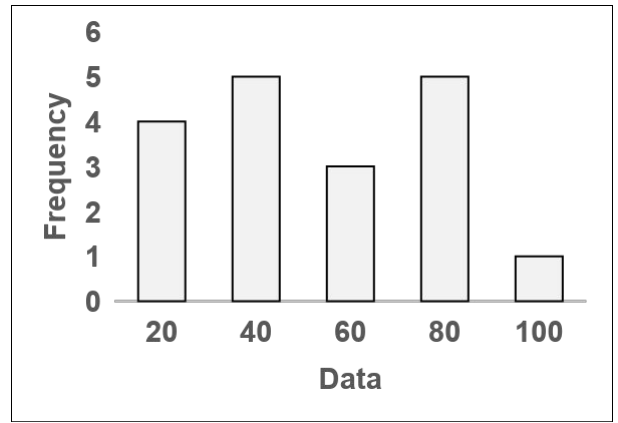
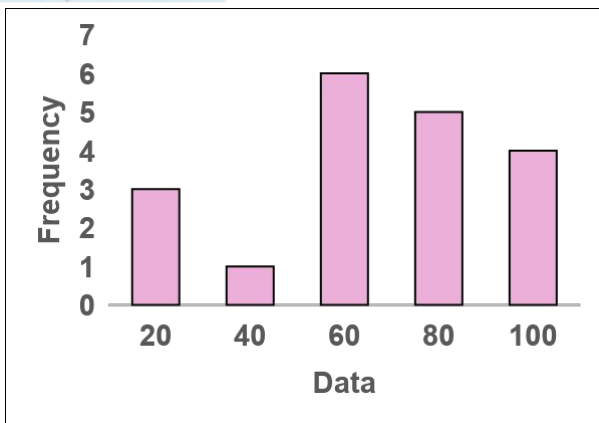
1.) _____



Data	20	40	60	80	100
Frequency	4	5	3	5	1

A.)

B.)



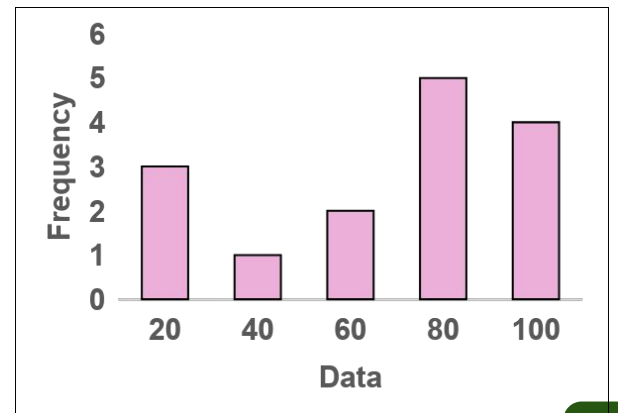
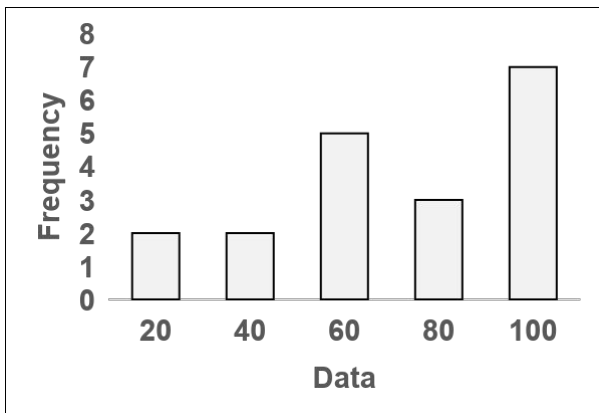
2.) _____



Data	20	40	60	80	100
Frequency	3	1	2	5	4

A.)

B.)



NURSERY ROOM

G8
Advanced

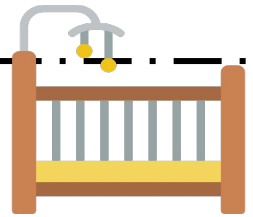
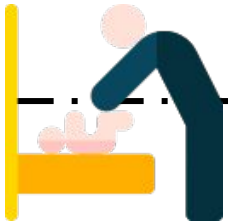
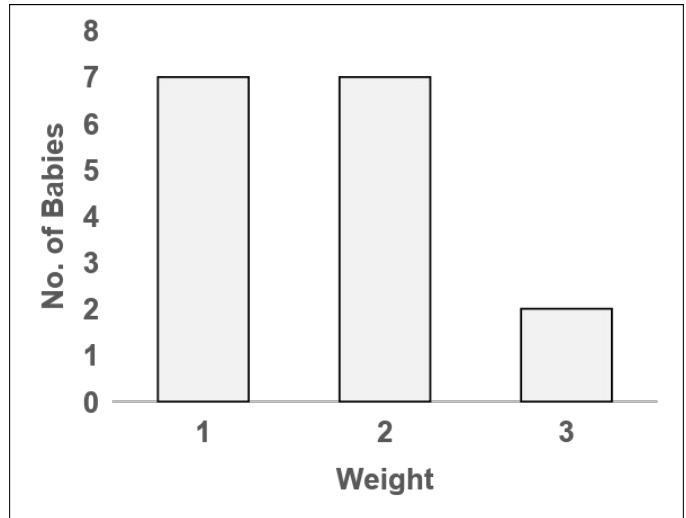
As an intern, you are assigned to help in the nursery room. To help the nurses, state whether the given histogram is correct based on the given data. Write “TRUE” if it is true, otherwise write “FALSE”. Expound your answers.

1

Does the histogram shows the correct weight of 18 babies as recorded in the table?

2 1.5 3 1.13 4 1
1 2.3 2.9 1.5 2 1.2
1 2 2.2 3.1 2 1.3

TRUE/FALSE: _____

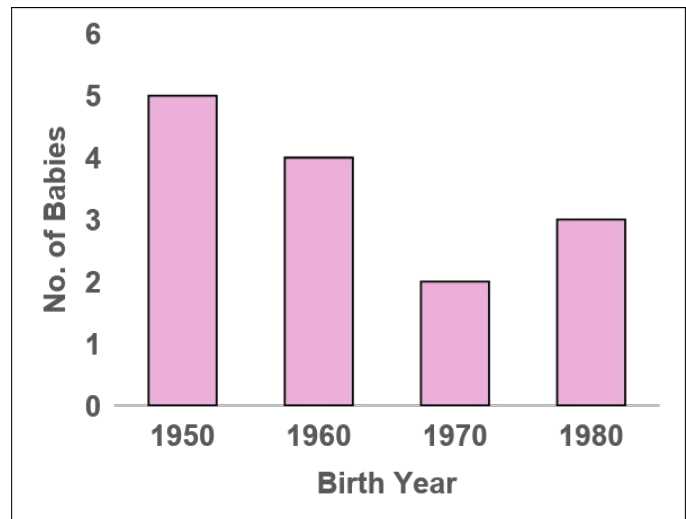


2

Does the histogram shows the correct birth year of 20 babies as recorded in the table?

2000 2001 2015 2000 2001
1999 1997 2011 2002 2002
1998 1997 2010 2004 2003
2002 2005 2008 2007 2000

TRUE/FALSE: _____

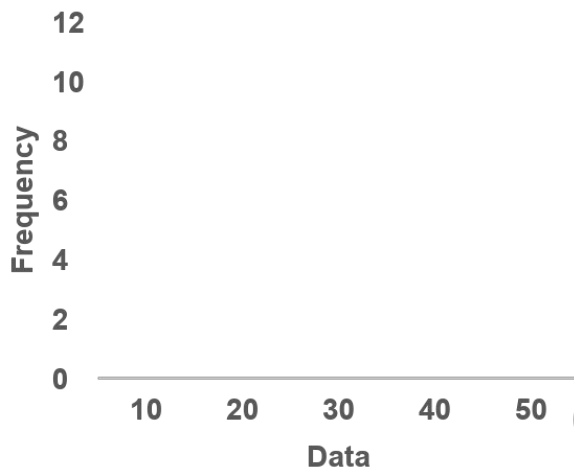


STETHOSCOPE

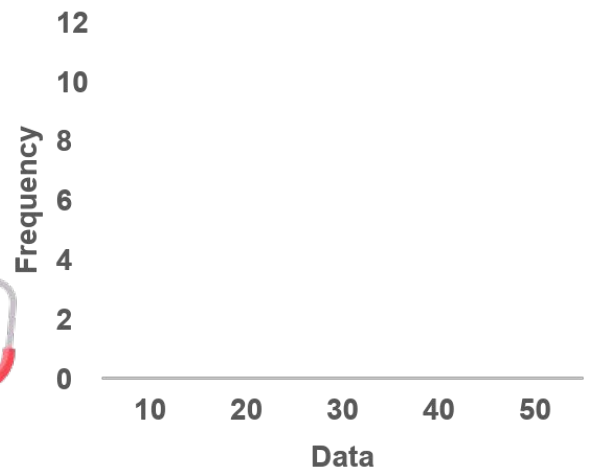
G8
Advanced

You will be given a free stethoscope if you managed to answer the following. Illustrate the correct histogram of the data given below. Write your answers on the space provided.

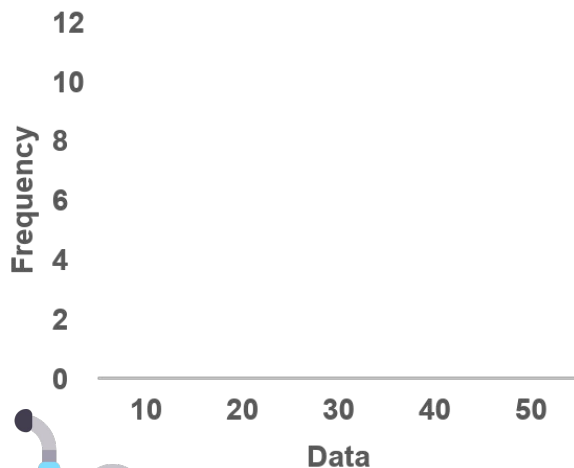
1.) 8, 3, 4, 7, 17, 10, 10, 27, 23, 29, 20, 29, 35, 35, 35, 34, 33, 44, 47, 48



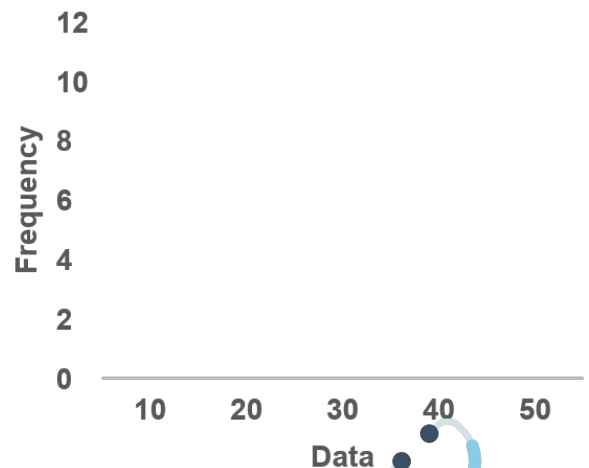
2.) 9, 8, 1, 9, 6, 16, 25, 22, 35, 45, 46



3.) 7, 2, 3, 10, 14, 12, 25, 28, 25, 28, 26, 30, 35, 35, 47



4.) 5, 1, 1, 12, 25, 22, 26, 31, 37, 33, 43, 48, 41



SYMPTOMS

G8
Advanced

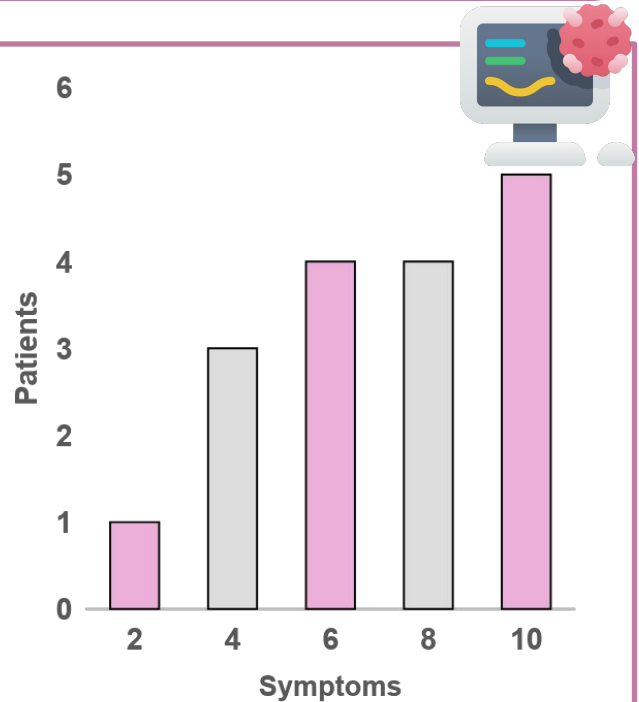
Dr. Holly needs your help to assess her patients if they have symptoms of COVID-19. Help her by answering the following questions below. Analyze the histogram and answer the questions. Write your answers on the space provided.

1.) The histogram on the right side shows the number of symptoms each patient has.

a.) Most patients assessed has ____ symptoms.

b.) How many patients assessed that has 8 symptoms? ____

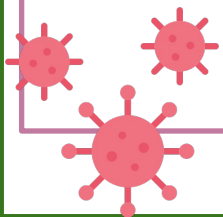
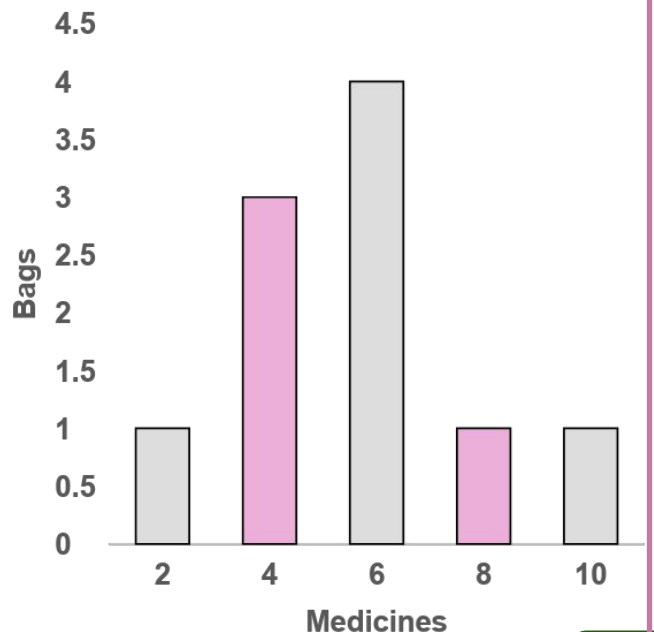
c.) How many patients are represented in the histogram?



2.) The histogram on the right side shows the number of medicines each bag has.

a.) How many bags contain 6 types of medicines? ____

b.) How many bags are represented in this histogram?



A Day In the Life Of A Doctor

G8
Advanced

Watch the movie “A Day in the Life of a Doctor” for free if you managed to complete the table and create histogram below. Write your answers on the space provided.

1

Below is the list of birth years of all the nurses at the Faraday Hospital NYC, fill in the frequency table using this data, then create a histogram.

1962, 1971, 1979, 1960, 1963,
1983, 1990, 1981, 1983, 1992,
1993, 1950, 1976, 1956, 1955,
1961, 1974, 1993, 1951, 1982,
1966, 1977



Year	Frequency
1950's	
1960's	
1970's	
1980's	
1990's	



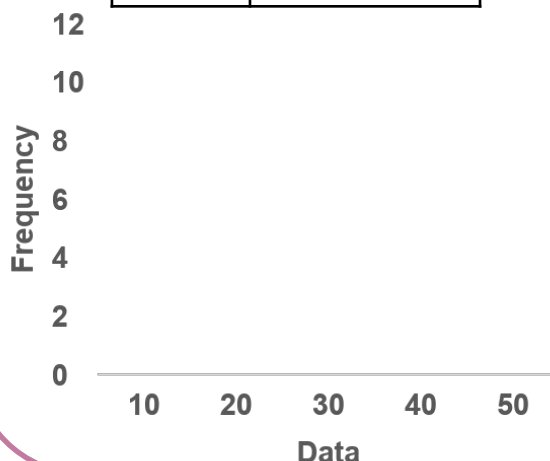
2

The data below is the total time in hours the doctors worked each day. Fill in the data in the frequency table, then use it to create a histogram.

9, 10, 23, 21, 16, 14, 12, 11, 6,
24, 26, 17, 19, 22, 24, 25, 15,
9, 9, 5, 21, 20, 33, 37



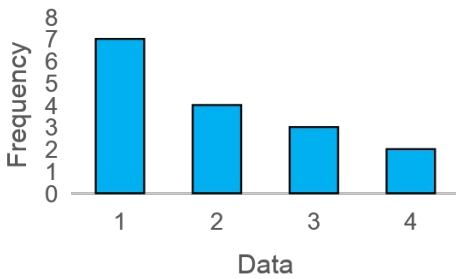
Year	Frequency
10	
20	
30	
40	
50	



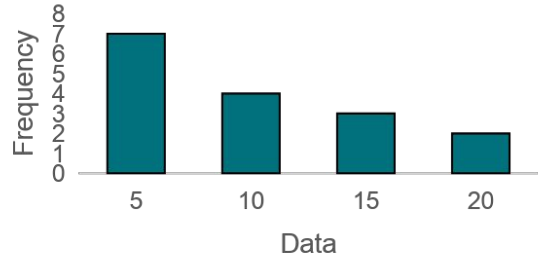
ANSWER GUIDE

Activity 1

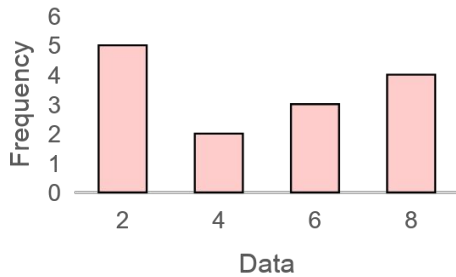
1.) C



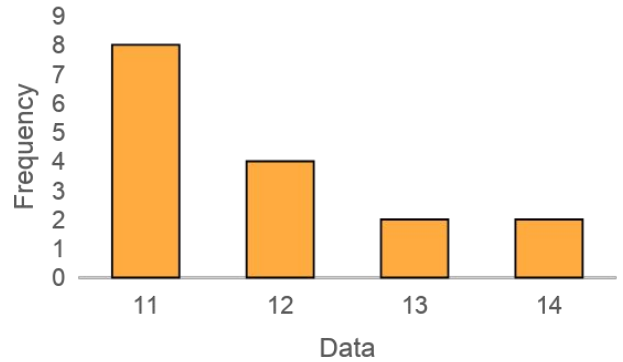
2.) B



3.) A



4.) D



Activity 2

1.) Frequency

Frequency
6
1
1

2.) Frequency

Frequency
8
2
6
2

3.) Frequency

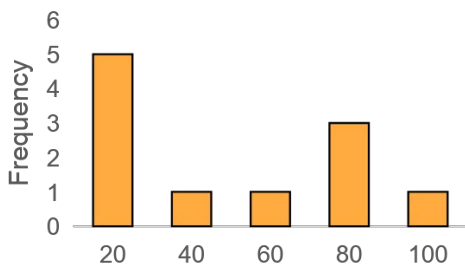
Frequency
6
2
4
2

4.) Frequency

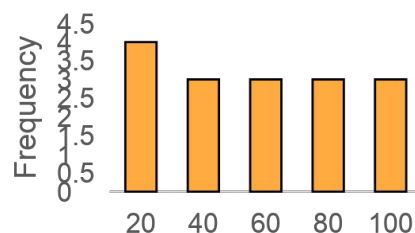
Frequency
9
4
4
2

Activity 3

1.)

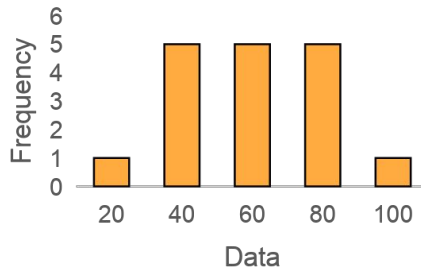


2.)



ANSWER GUIDE

3.)



Activity 4

1.) B 2.) A 3.) A 4.) C 5.) B

Activity 5

1.)

Data	Freq.
20	2
40	3
60	5
80	4
100	2

2.)

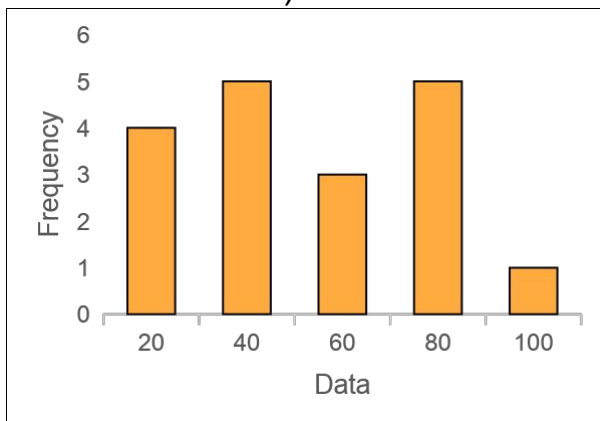
Data	Freq.
20	2
40	3
60	6
80	6
100	2

3.)

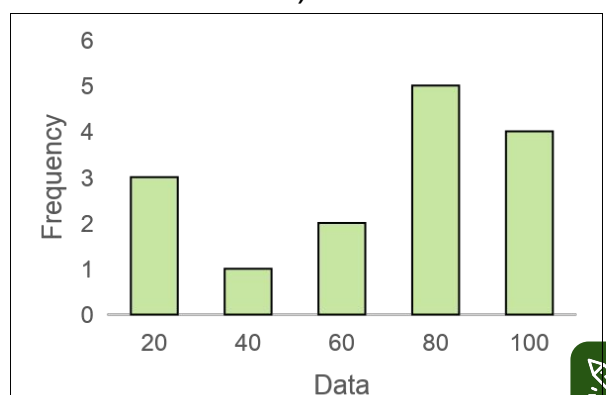
Data	Freq.
20	2
40	2
60	5
80	3
100	7

Activity 6

1.)B



2.) B

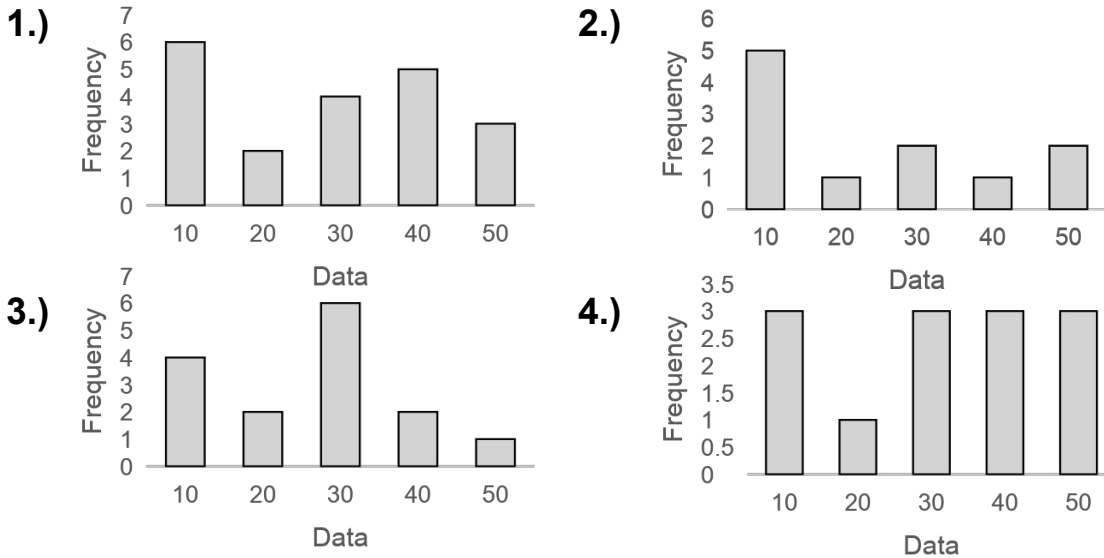


ANSWER GUIDE

Activity 7

1. TRUE 2.) FALSE

Activity 8



Activity 9

- 1.) a.) Most patients assessed has 10 symptoms.
b.) How many patients assessed that has 8 symptoms? 4
c.) How many patients are represented in this histogram? 17
- 2.) a.) How many bags contain 6 types of medicines? 4
b.) How many bags are represented in this histogram? 20

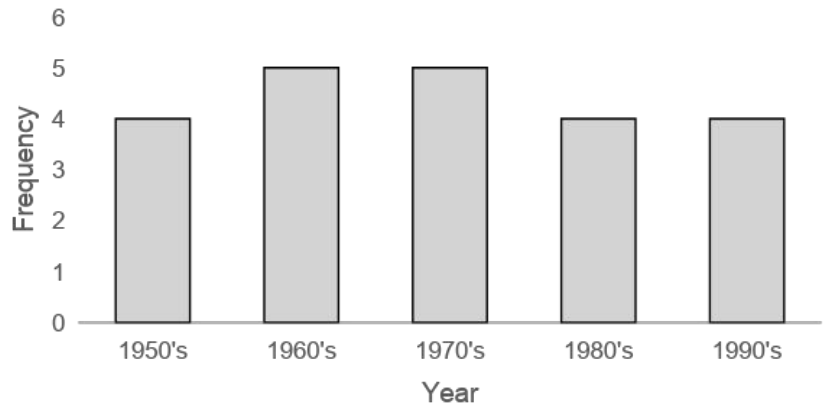


ANSWER GUIDE

Activity 10

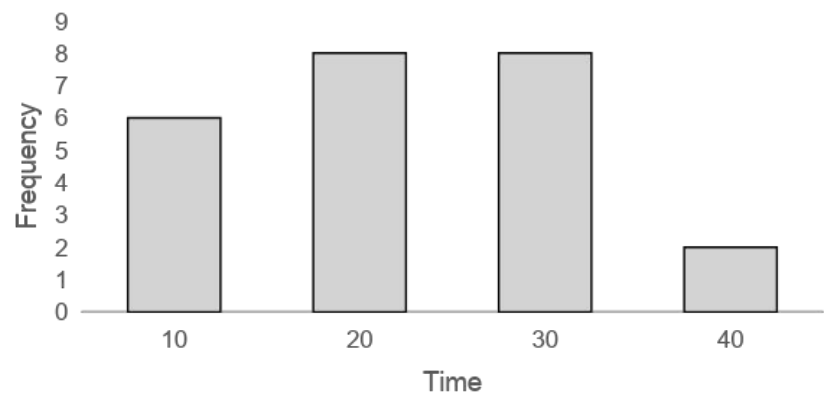
1.)

Frequency
4
5
5
4
4



2.)

Frequency
6
8
8
2



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