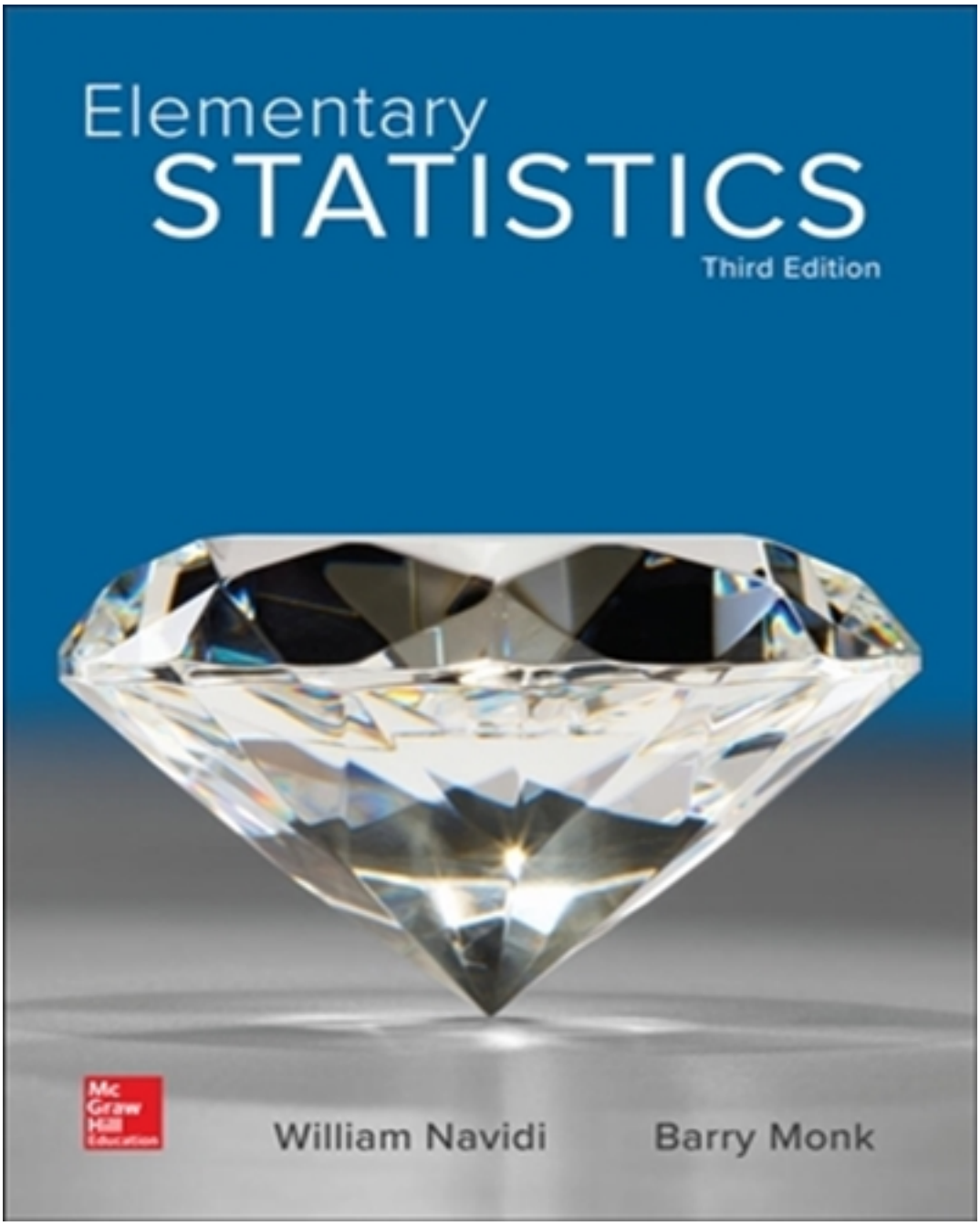
Test Bank for Elementary Statistics 3rd Edition by Navidi

CLICK HERE TO ACCESS COMPLETE Test Bank

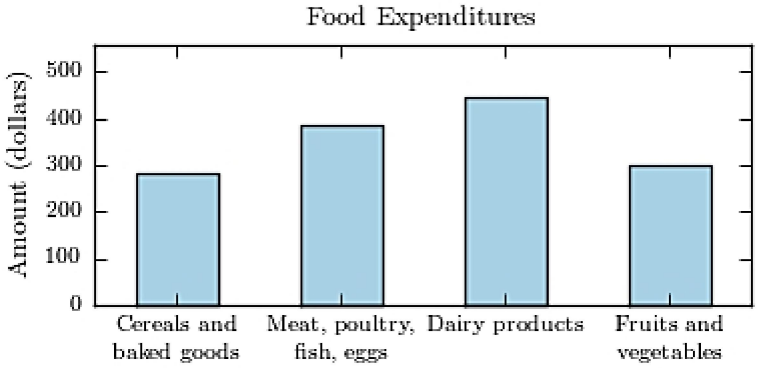


Test Bank

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

The following bar graph presents the average amount a certain family spent, in dollars, on various food categories in a recent year.

On which food category was the most money spent?

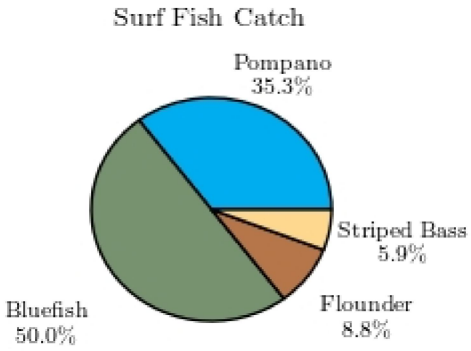


A) Meat poultry, fish, eggs
B) Fruits and vegetables
C) Dairy products
D) Cereals and baked goods

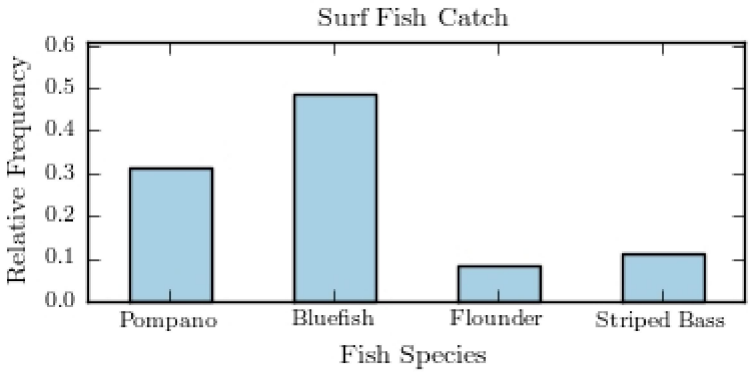
Answer: C

The following pie chart presents the percentages of fish caught in each of four ratings categories.

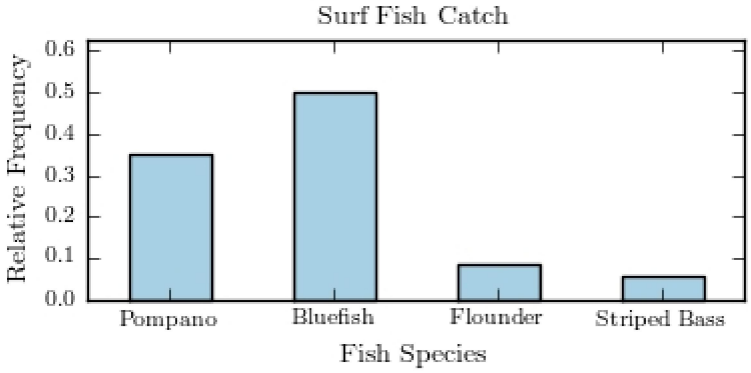
Match this pie chart with its corresponding bar graph.



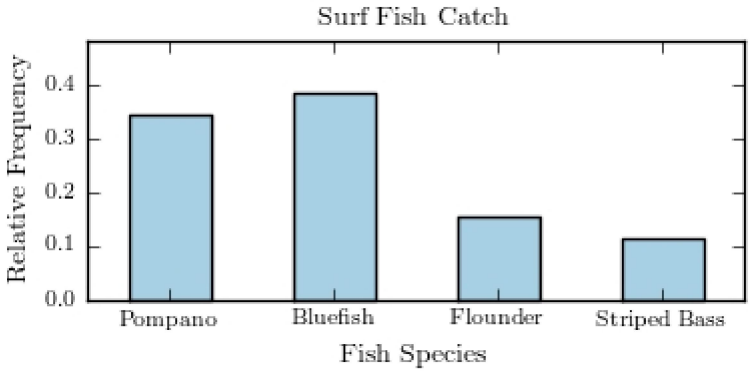
A)



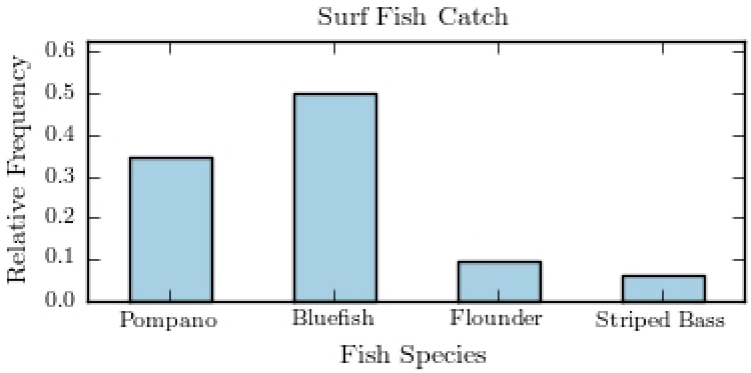
B)



C)



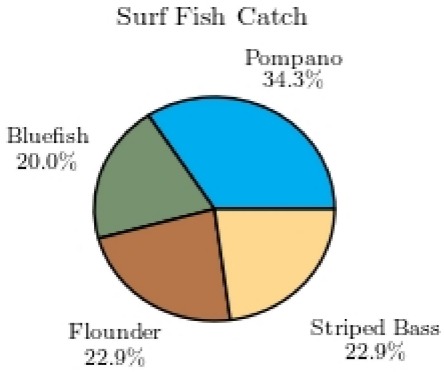
D)



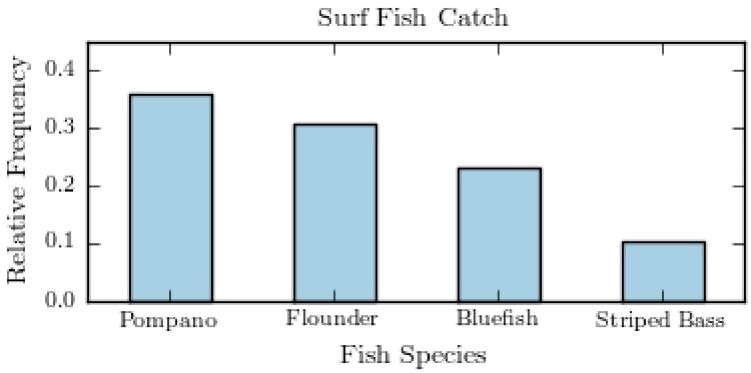
Answer: B

The following pie chart presents the percentages of fish caught in each of four ratings categories.

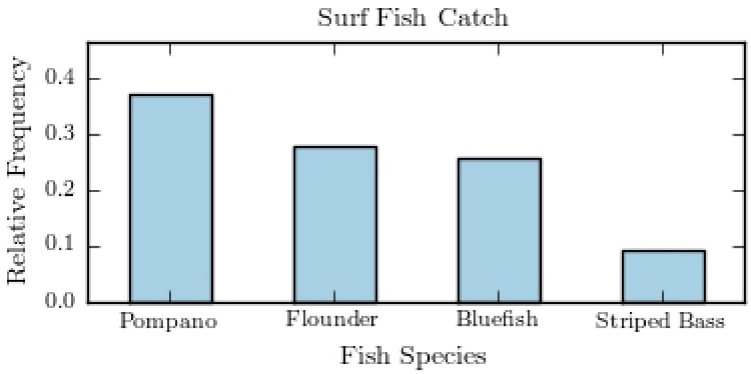
Match this pie chart with its corresponding Pareto chart.



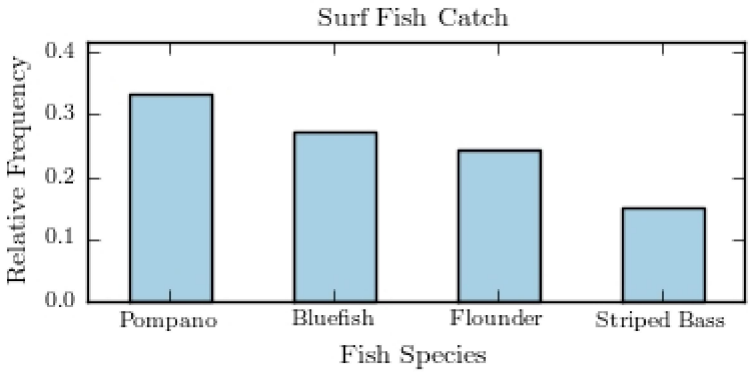
A)



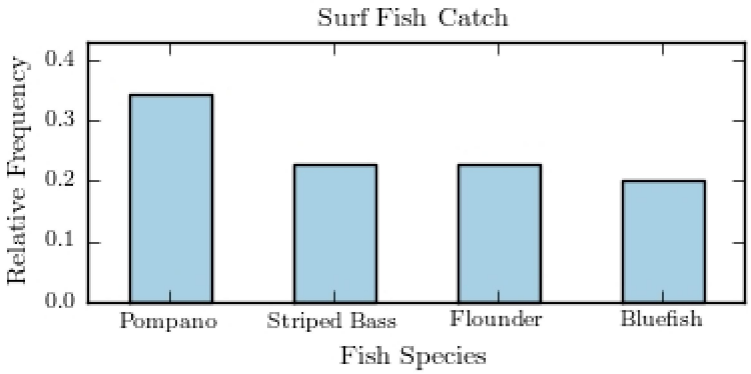
B)



C)

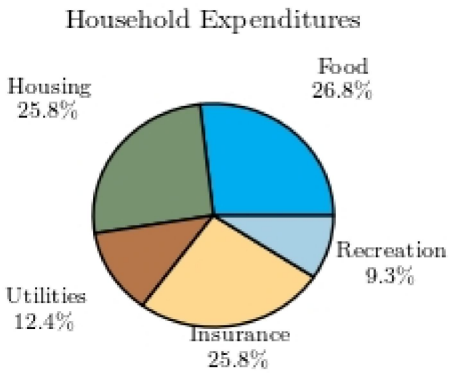


D)



Answer: D

Following is a pie chart that presents the percentages spent by a certain household on its five largest annual expenditures. What percentage of the money spent was spent on food, housing, and utilities?



A) 52.6%
B) 61.9%
C) 50%
D) 65%

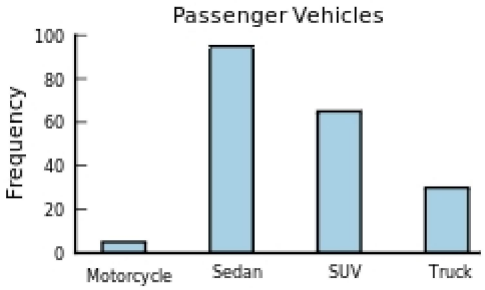
Answer: D

The following frequency distribution presents the frequency of passenger vehicles that pass through a certain intersection from 8:00 AM to 9:00 AM on a particular day.

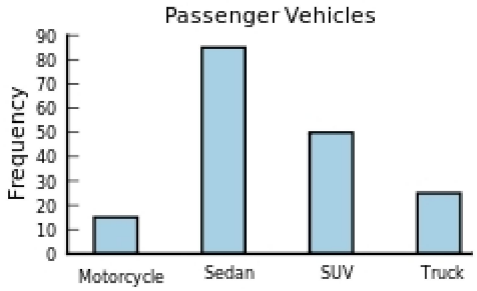
Vehicle Type	Frequency
Motorcycle	5
Sedan	75
SUV	70
Truck	35

Construct a frequency bar graph for the data.

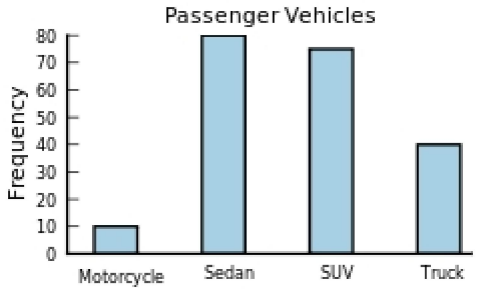
A)



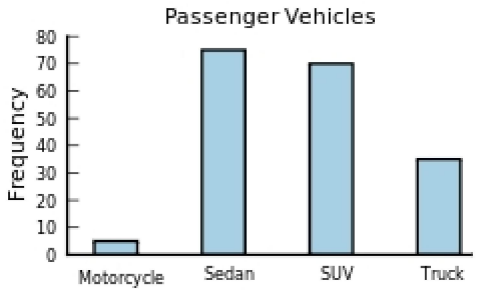
B)



C)



D)



Answer: D

The following frequency distribution presents the frequency of passenger vehicles that pass through a certain intersection from 8:00 AM to 9:00 AM on a particular day.

Vehicle Type	Frequency
Motorcycle	15
Sedan	80
SUV	88
Truck	34

What is the relative frequency of the Motorcyle category?

A) 15

B) 0.17

C) 0.069

D) 15%

Answer: C

The following frequency distribution presents the frequency of passenger vehicles that pass through a certain intersection from 8:00 AM to 9:00 AM on a particular day.

Vehicle Type	Frequency
Motorcycle	7
Sedan	63
SUV	84
Truck	30

Construct a relative frequency distribution for the data.

A)

Vehicle Type	Relative Frequency
Motorcycle	0.038
Sedan	0.342
SUV	0.457
Truck	0.163

B)

Vehicle Type	Relative Frequency
Motorcycle	0.07
Sedan	0.63
SUV	0.84
Truck	0.3

C)

Vehicle Type	Relative Frequency
Motorcycle	0.038%
Sedan	0.342%
SUV	0.457%
Truck	0.163%

D)

Vehicle Type	Relative Frequency
Motorcycle	0.083
Sedan	0.75
SUV	1
Truck	0.357

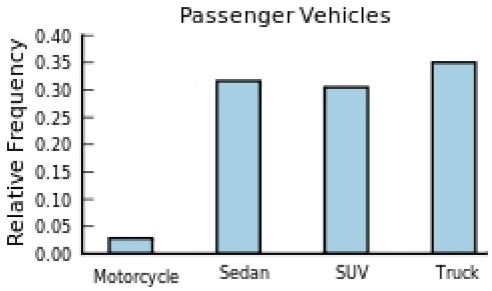
Answer: A

The following frequency distribution presents the frequency of passenger vehicles that pass through a certain intersection from 8:00 AM to 9:00 AM on a particular day.

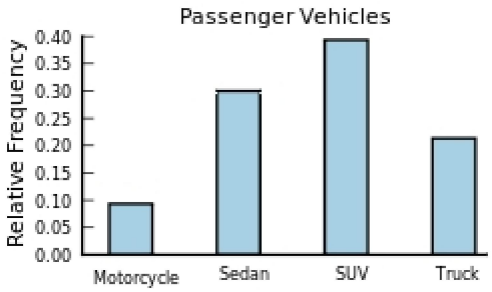
Vehicle Type	Frequency
Motorcycle	9
Sedan	54
SUV	27
Truck	53

Construct a relative frequency bar graph for the data.

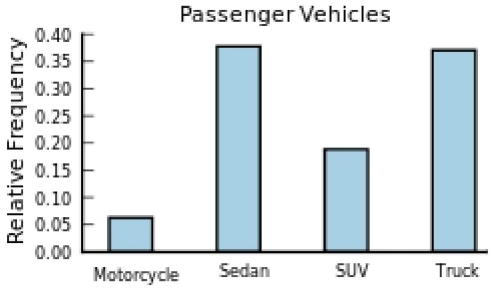
A)



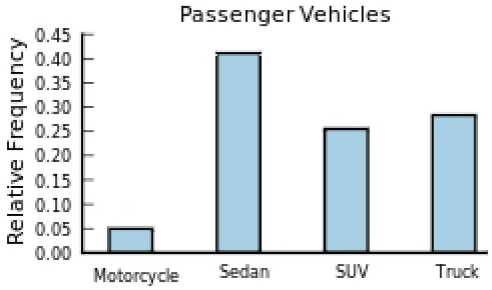
B)



C)



D)



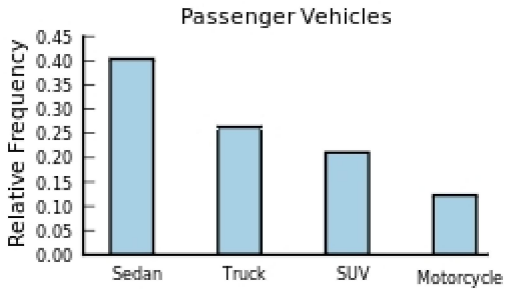
Answer: C

The following frequency distribution presents the frequency of passenger vehicles that pass through a certain intersection from 8:00 AM to 9:00 AM on a particular day.

Vehicle Type	Frequency
Motorcycle	7
Sedan	22
SUV	58
Truck	67

Construct a relative frequency Pareto chart for the data.

A)



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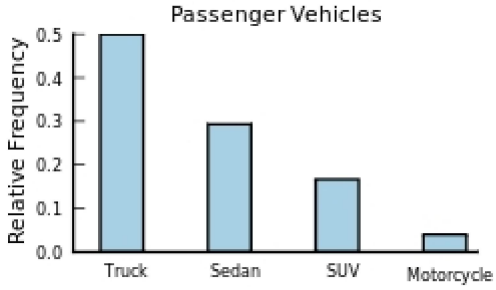

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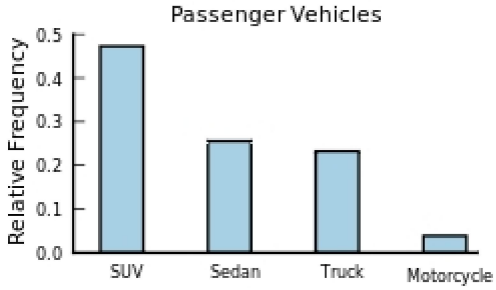
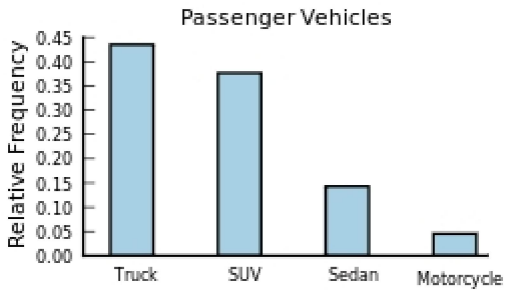


D)



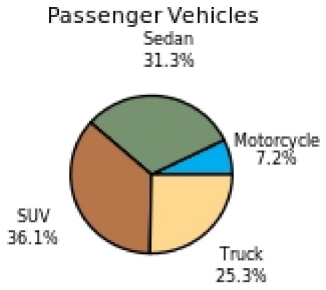
Answer: D

The following frequency distribution presents the frequency of passenger vehicles that pass through a certain intersection from 8:00 AM to 9:00 AM on a particular day.

Vehicle Type	Frequency
Motorcycle	12
Sedan	54
SUV	26
Truck	64

Construct a pie chart for the data.

A)



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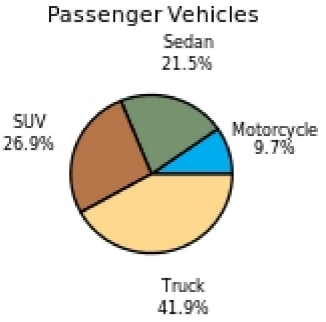
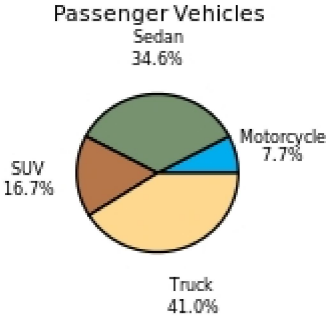
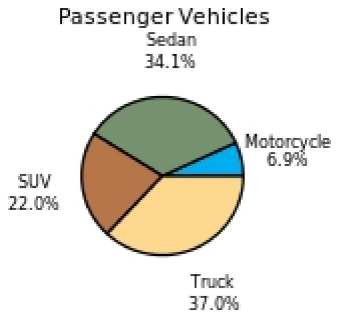


C)

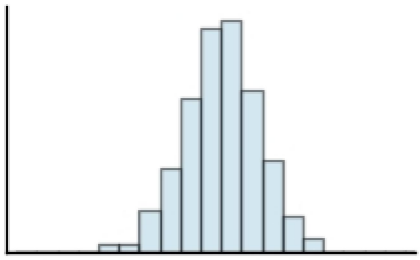


D)



Answer: C

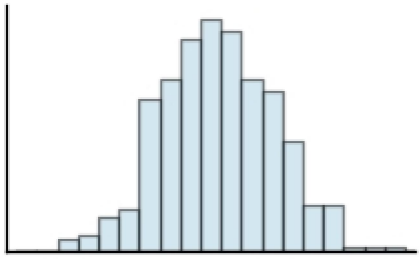
Classify the histogram as skewed to the left, skewed to the right, or approximately symmetric.



A) skewed to the right
B) skewed to the left
C) approximately symmetric

Answer: C

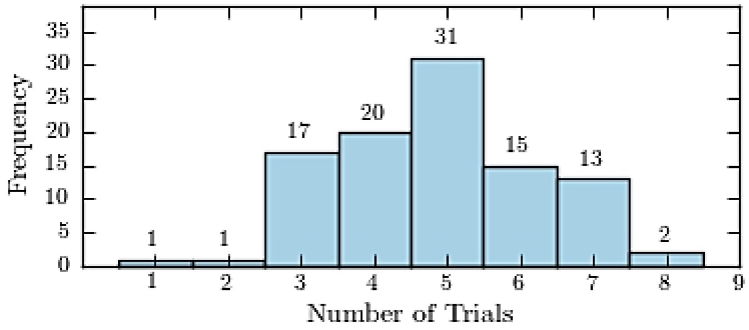
Classify the histogram as unimodal or bimodal.



A) bimodal
B) unimodal

Answer: B

One hundred students are shown an eight-digit number on a piece of cardboard for three seconds and are asked to then recite the number from memory. The process is repeated until the student accurately recites the entire number from memory. The following histogram presents the number of trials it took each student to memorize the number.



How many students memorized the number in three trials or less?

A) 24
B) 2
C) 81
D) 19

Answer: D

The following frequency distribution presents the weights in pounds (lb) of a sample of visitors to a health clinic.

Weight (lb)	Frequency
100-103	2
104-107	1
108-111	4
112-115	4
116-119	10
120-123	9
124-127	4
128-131	1

What is the class width?

A) 4
B) 3
C) 32
D) 5

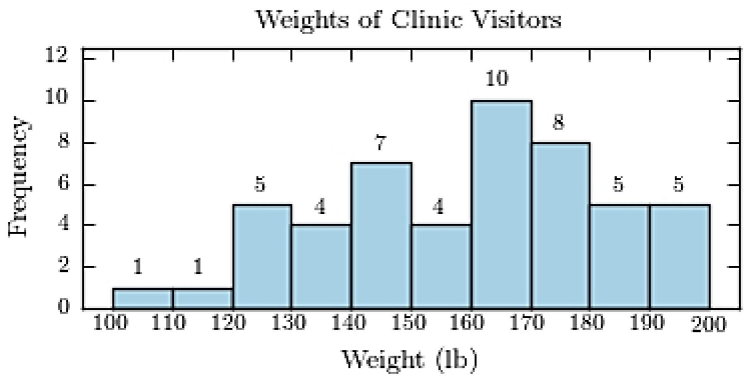
Answer: A

The following frequency distribution presents the weights in pounds (lb) of a sample of visitors to a health clinic.

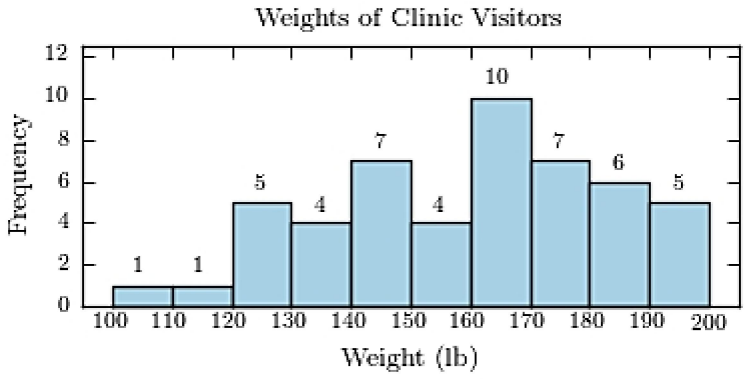
Weights of Clinic Visitors	
Weight (lb)	Frequency
100–109	1
110–119	1
120–129	5
130–139	4
140–149	7
150–159	4
160–169	10
170–179	8
180–189	5
190–199	5

Construct a frequency histogram.

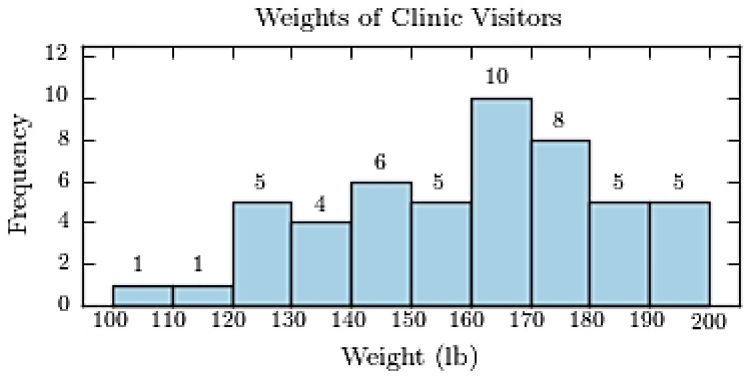
A)



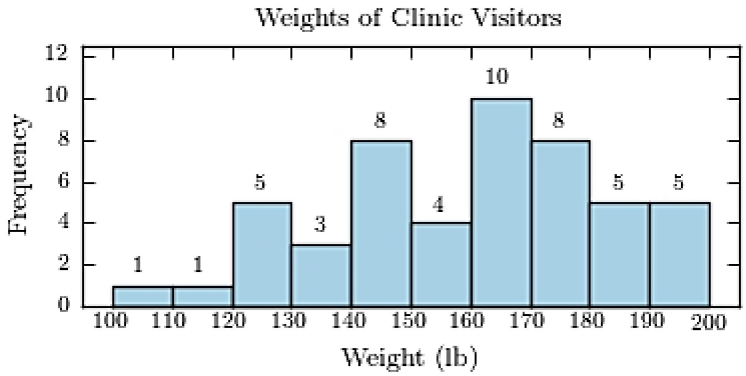
B)



C)



D)



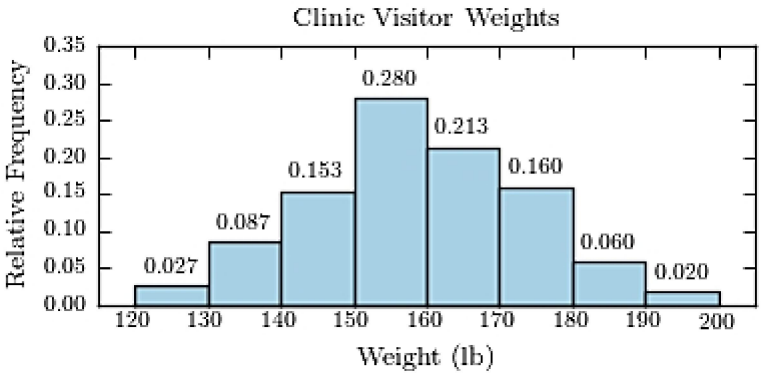
Answer: A

The following frequency distribution presents the weights in pounds (lb) of a sample of visitors to a health clinic.

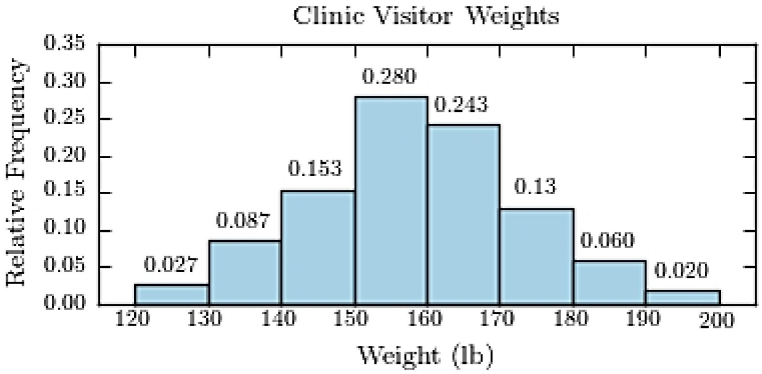
Clinic Visitor Weights	
Weight (lb)	Frequency
120-129	4
130-139	13
140-149	23
150-159	42
160-169	32
170-179	24
180-189	9
190-199	3

Construct a relative frequency histogram.

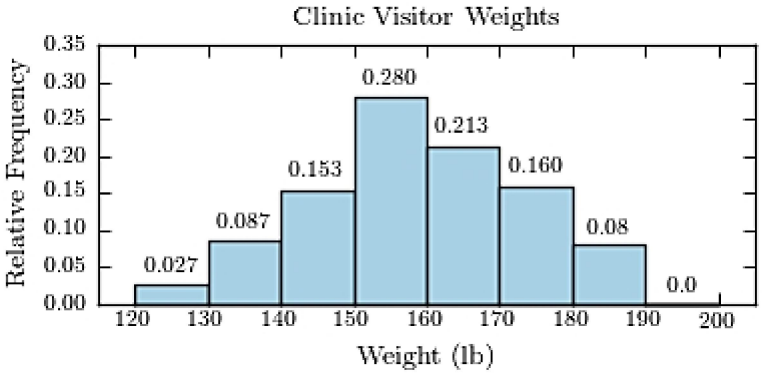
A)



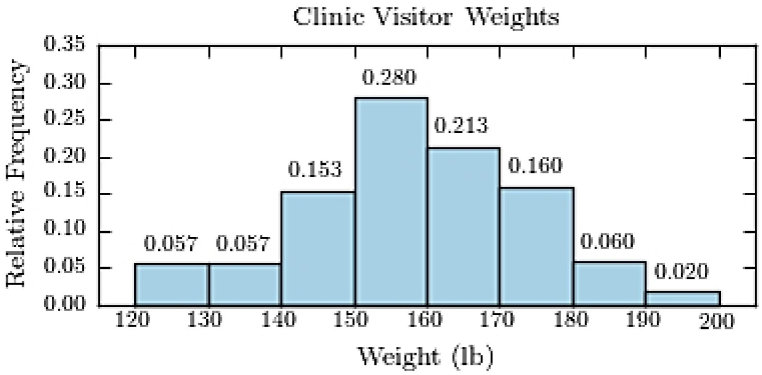
B)



C)



D)



Answer: A

The following table presents the purchase totals (in dollars) of a random sample of gasoline purchases at a convenience store.

Construct a frequency distribution using a class width of 10, and using 0 as the lower class limit for the first class.

76.59	48.55	93.66	60.17	39.10
93.28	65.43	34.12	80.41	77.16
80.07	93.46	39.19	43.84	44.70
68.74	89.98	6.97	52.86	68.93

A)

Convenience Store Gas Purchases	
Amount (dollars)	Frequency
0.00-9.99	1
10.00-19.99	0
20.00-29.99	1
30.00-39.99	2
40.00-49.99	3
50.00-59.99	1
60.00-69.99	4
70.00-79.99	2
80.00-89.99	3
90.00-99.99	3

B)

Convenience Store Gas Purchases	
Amount (dollars)	Frequency
0.00-9.99	1
10.00-19.99	0
20.00-29.99	0
30.00-39.99	3
40.00-49.99	3
50.00-59.99	1
60.00-69.99	4
70.00-79.99	2
80.00-89.99	4
90.00-99.99	2

C)

Convenience Store Gas Purchases	
Amount (dollars)	Frequency
0.00-9.99	1
10.00-19.99	0
20.00-29.99	0
30.00-39.99	4
40.00-49.99	2
50.00-59.99	1
60.00-69.99	4
70.00-79.99	2
80.00-89.99	3
90.00-99.99	3

D)

Convenience Store Gas Purchases	
Amount (dollars)	Frequency
0.00-9.99	1
10.00-19.99	0
20.00-29.99	0
30.00-39.99	3
40.00-49.99	3
50.00-59.99	1
60.00-69.99	4
70.00-79.99	2
80.00-89.99	3
90.00-99.99	3

Answer: D

The following table presents the purchase totals (in dollars) of a random sample of gasoline purchases at a convenience store.

Construct a relative frequency distribution using a class width of 10, and using 0 as the lower class limit for the first class.

57.46	27.21	6.12	97.99	68.22
28.97	39.41	77.56	37.06	73.09
88.82	61.29	93.24	65.96	42.37
94.38	7.67	16.95	71.17	65.37

A)

Convenience Store Gas Purchases	
Amount (dollars)	Relative Frequency
0.00-9.99	0.100
10.00-19.99	0.050
20.00-29.99	0.100
30.00-39.99	0.100
40.00-49.99	0.050
50.00-59.99	0.040
60.00-69.99	0.210
70.00-79.99	0.150
80.00-89.99	0.050
90.00-99.99	0.150

B)

Convenience Store Gas Purchases	
Amount (dollars)	Relative Frequency
0.00-9.99	0.100
10.00-19.99	0.050
20.00-29.99	0.100
30.00-39.99	0.100
40.00-49.99	0.030
50.00-59.99	0.070
60.00-69.99	0.200
70.00-79.99	0.150
80.00-89.99	0.050
90.00-99.99	0.150

C)

Convenience Store Gas Purchases	
Amount (dollars)	Relative Frequency
0.00-9.99	0.100
10.00-19.99	0.050
20.00-29.99	0.100
30.00-39.99	0.100
40.00-49.99	0.050
50.00-59.99	0.050
60.00-69.99	0.200
70.00-79.99	0.150
80.00-89.99	0.050
90.00-99.99	0.150

D)

Convenience Store Gas Purchases	
Amount (dollars)	Relative Frequency
0.00-9.99	0.100
10.00-19.99	0.050
20.00-29.99	0.100
30.00-39.99	0.080
40.00-49.99	0.070
50.00-59.99	0.050
60.00-69.99	0.200
70.00-79.99	0.150
80.00-89.99	0.050
90.00-99.99	0.150

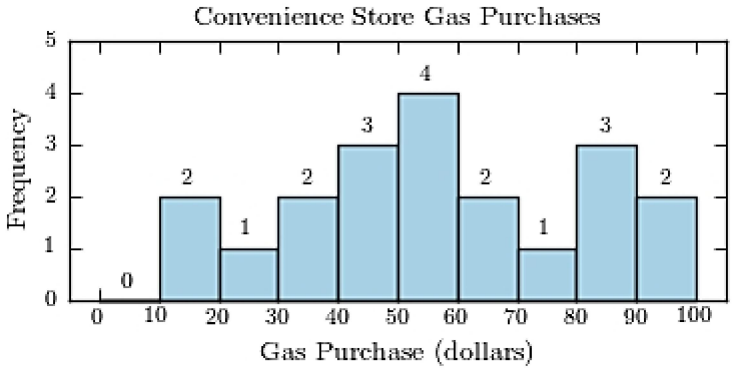
Answer: C

The following table presents the purchase totals (in dollars) of a random sample of gasoline purchases at a convenience store.

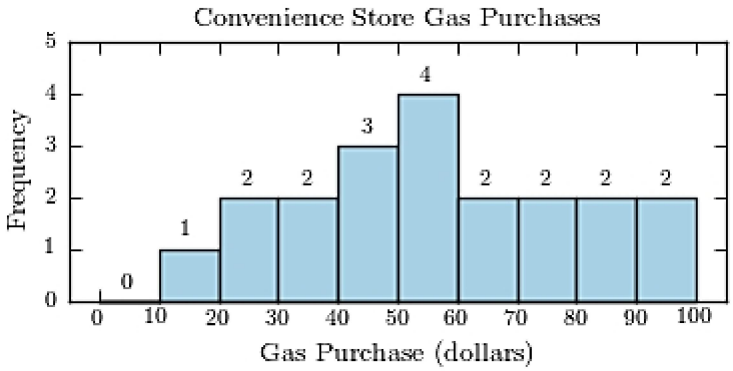
Construct a frequency histogram using a class width of 10, and using 0 as the lower class limit for the first class.

69	55	17	55	81
66	99	44	34	79
22	83	91	15	35
53	74	40	55	49

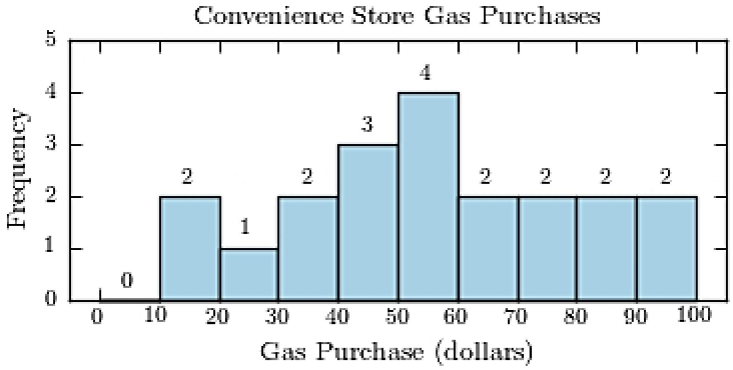
A)



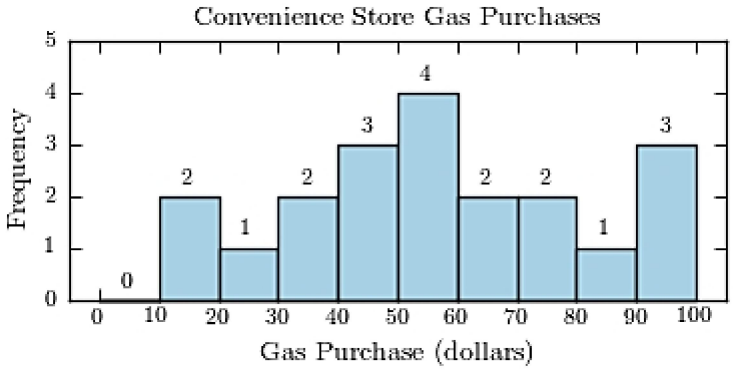
B)



C)



D)



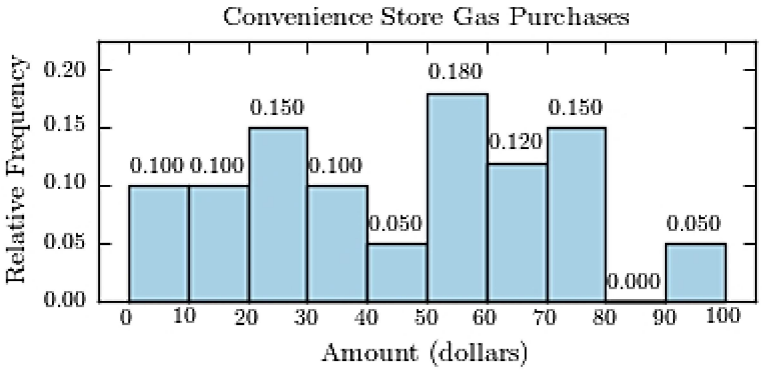
Answer: C

The following table presents the purchase totals (in dollars) of a random sample of gasoline purchases at a convenience store.

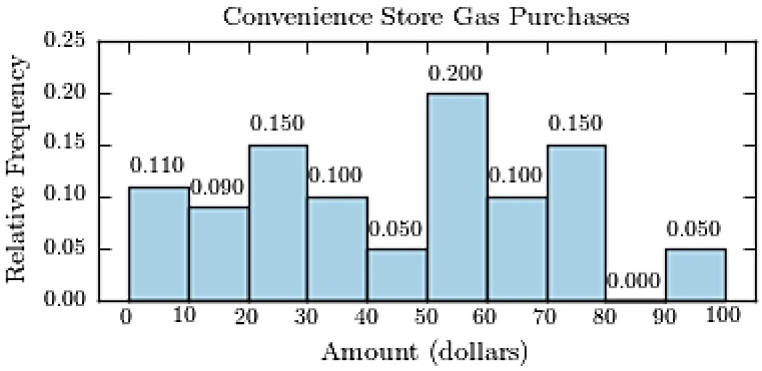
Construct a relative frequency histogram using a class width of 10, and using 0 as the lower class limit for the first class.

51.13	6.11	36.05	22.27	94.54
49.64	52.78	79.28	51.88	6.29
33.57	53.92	24.91	23.89	79.10
14.86	63.94	15.87	76.44	60.96

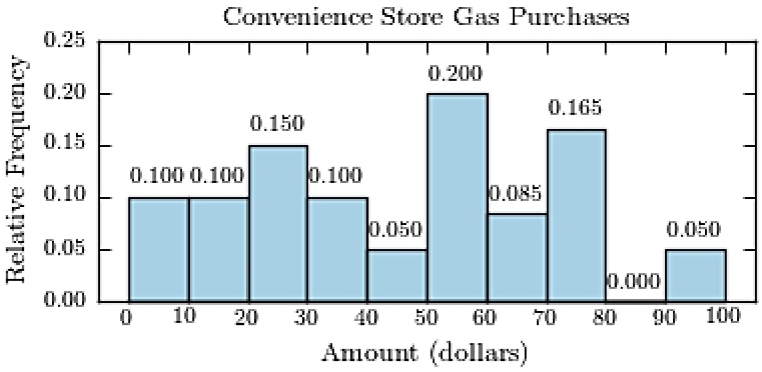
A)



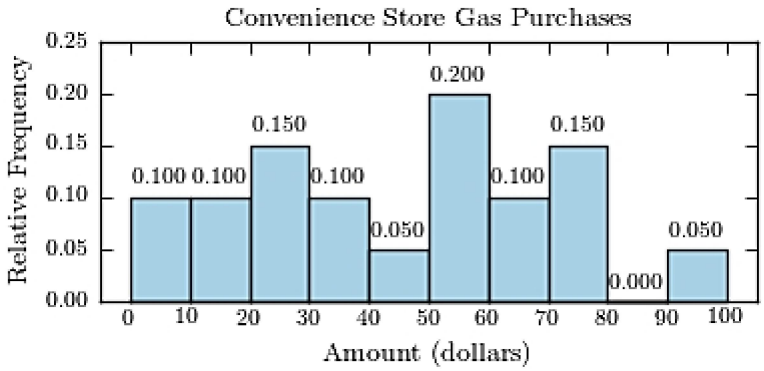
B)



C)



D)



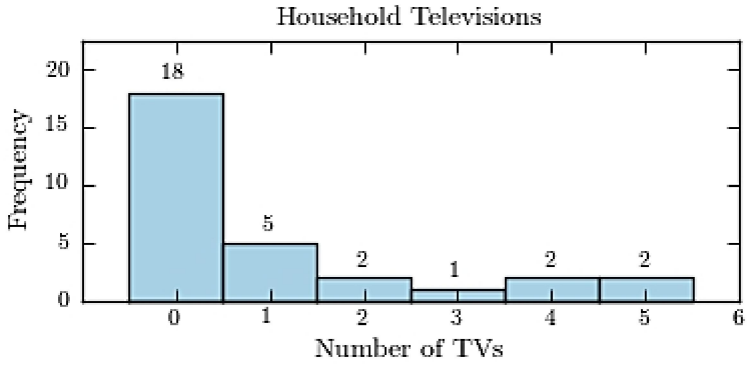
Answer: D

Thirty households were surveyed for the number of televisions in each home. Following are the results.

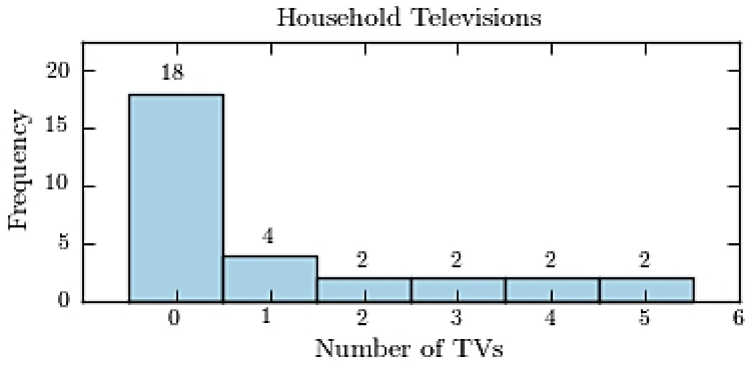
0	1	0	2	3	0	0	0	0	5
4	1	0	0	0	4	0	5	1	0
0	0	0	3	1	1	0	0	0	0

Construct a frequency histogram.

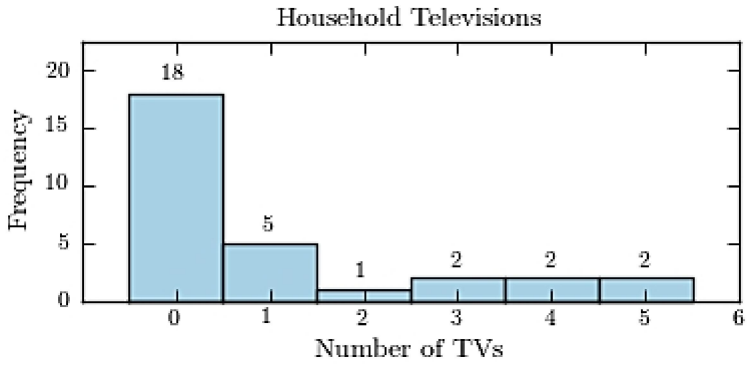
A)



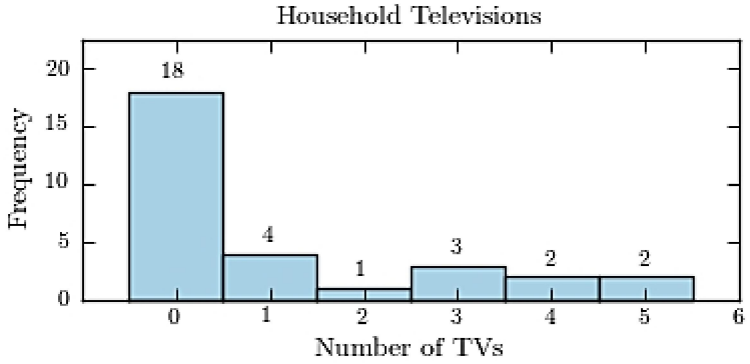
B)



C)



D)



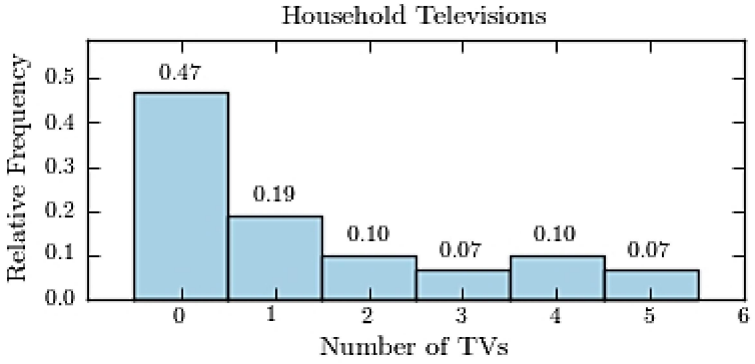
Answer: C

Thirty households were surveyed for the number of televisions in each home. Following are the results.

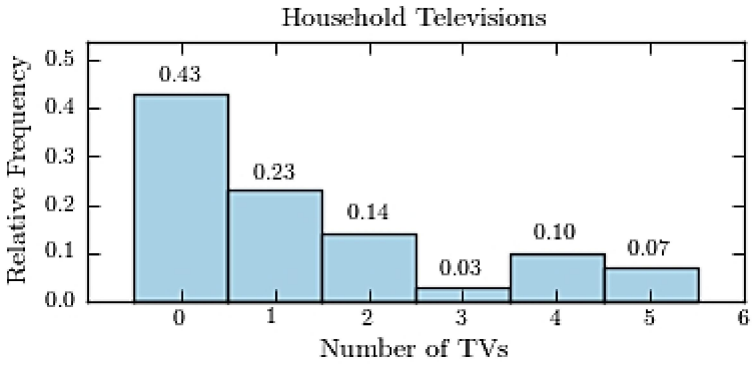
0	0	0	0	1	1	0	4	2	5
0	2	1	0	2	4	0	0	0	1
0	1	1	5	3	0	4	1	3	0

Construct a relative frequency histogram.

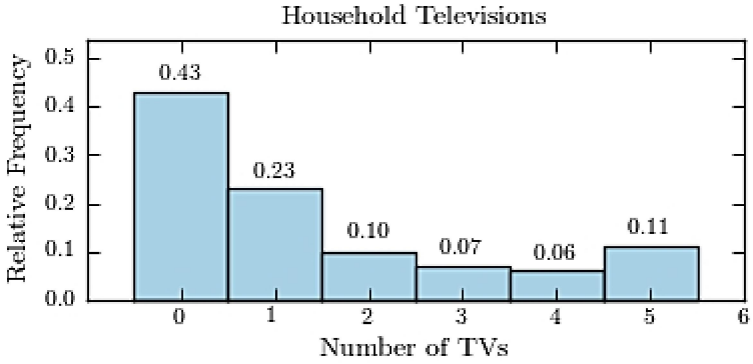
A)



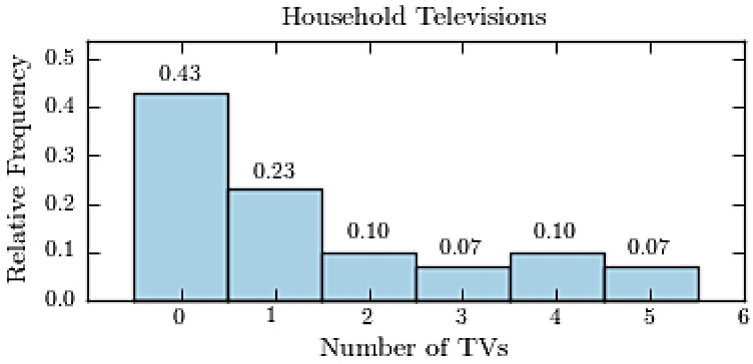
B)



C)



D)



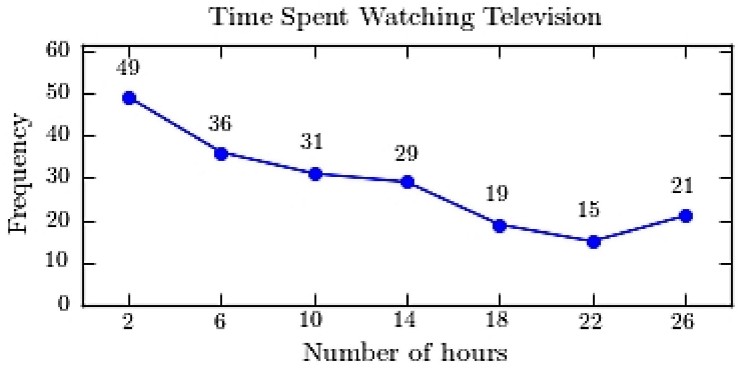
Answer: D

A sample of 200 high school students were asked how many hours per week they spend watching television. The following frequency distribution presents the results.

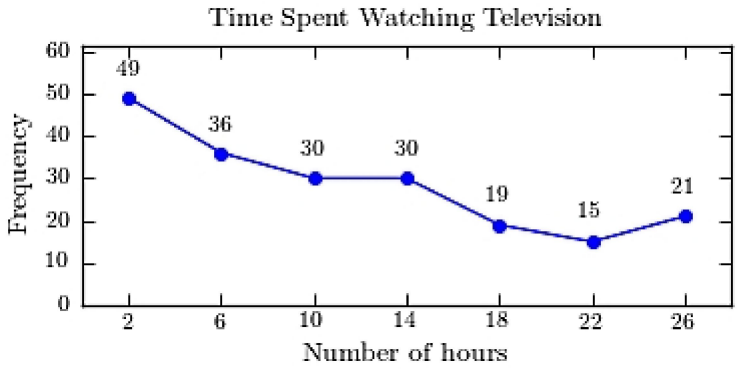
Time Spent Watching Television	
Number of hours	Frequency
0.0-3.9	49
4.0-7.9	36
8.0-11.9	31
12.0-15.9	29
16.0-19.9	19
20.0-23.9	15
24.0-27.9	21

Construct a frequency polygon for the frequency distribution.

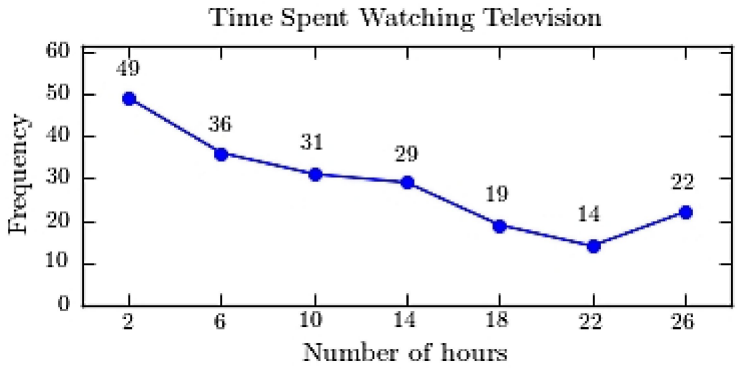
A)



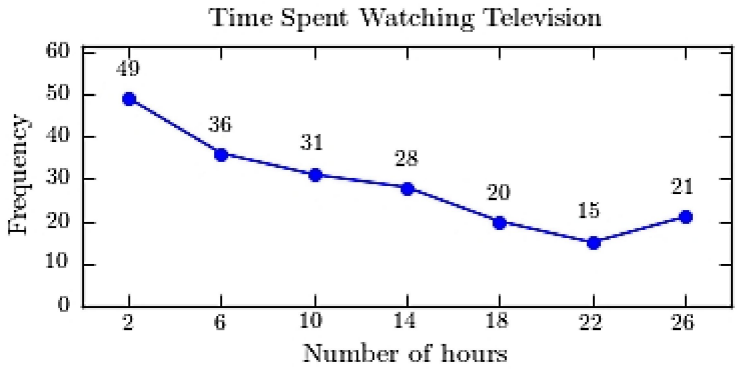
B)



C)



D)



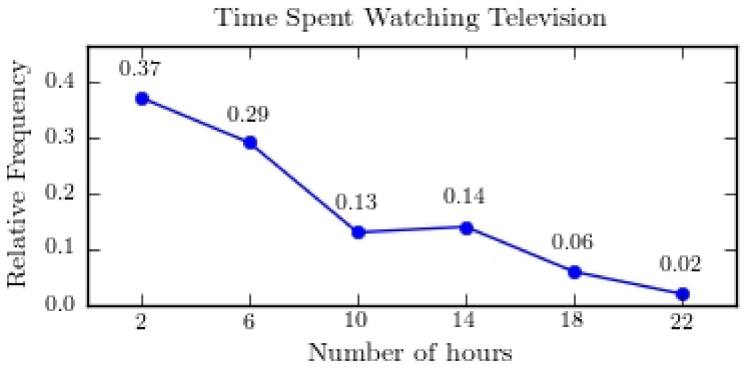
Answer: A

A sample of 200 high school students were asked how many hours per week they spend watching television. The following frequency distribution presents the results.

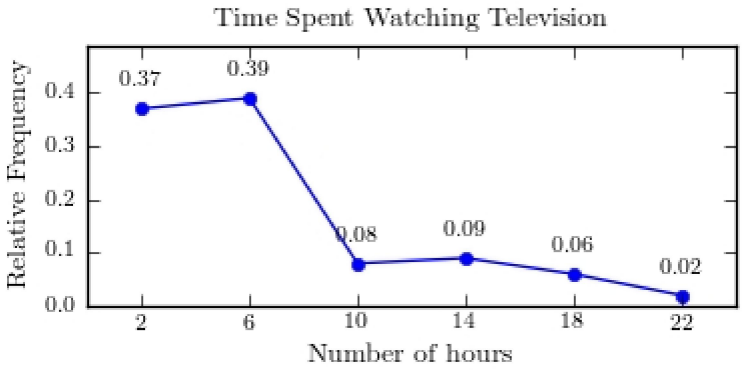
Time Spent Watching Television	
Number of hours	Frequency
0.0-3.9	74
4.0-7.9	57
8.0-11.9	35
12.0-15.9	18
16.0-19.9	12
20.0-23.9	4

Construct a relative frequency polygon for the frequency distribution.

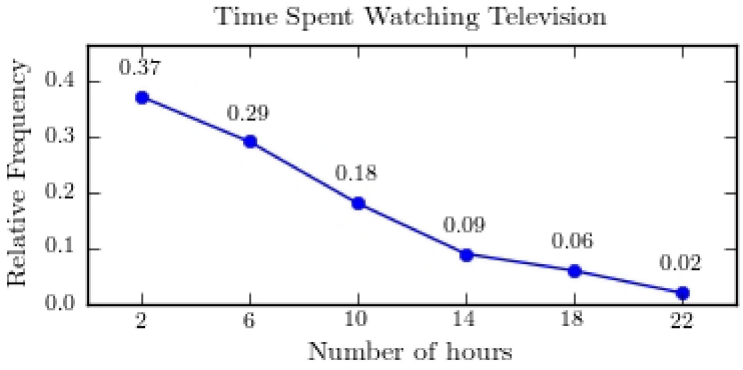
A)



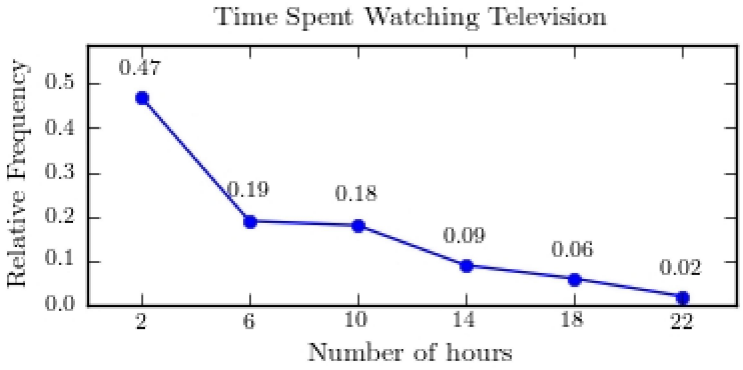
B)



C)



D)



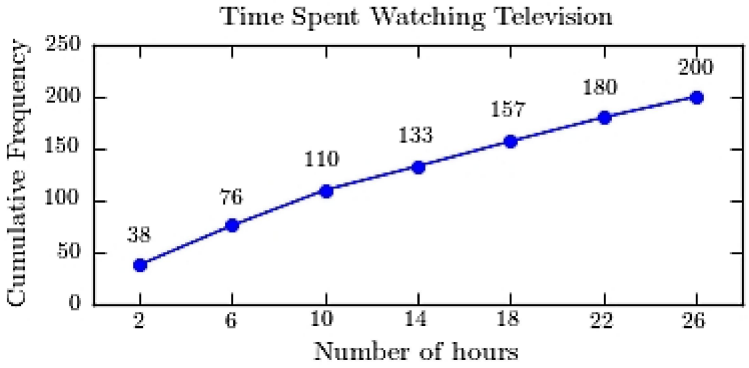
Answer: C

A sample of 200 high school students were asked how many hours per week they spend watching television. The following frequency distribution presents the results.

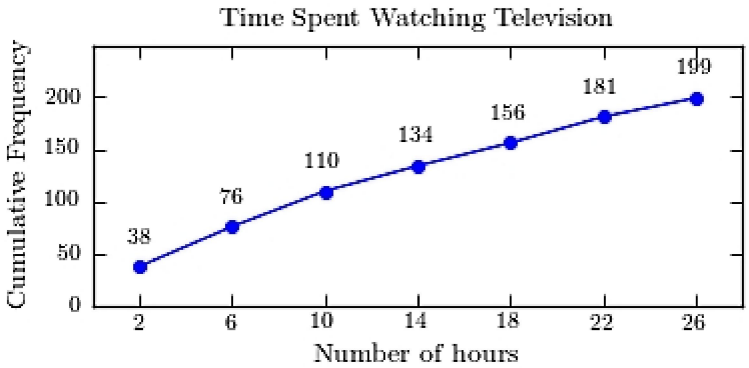
Time Spent Watching Television	
Number of hours	Frequency
0.0-3.9	38
4.0-7.9	38
8.0-11.9	34
12.0-15.9	23
16.0-19.9	24
20.0-23.9	23
24.0-27.9	20

Construct a frequency ogive for the frequency distribution.

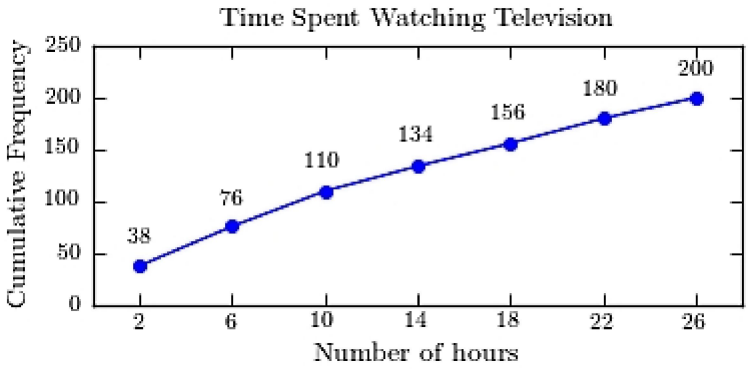
A)



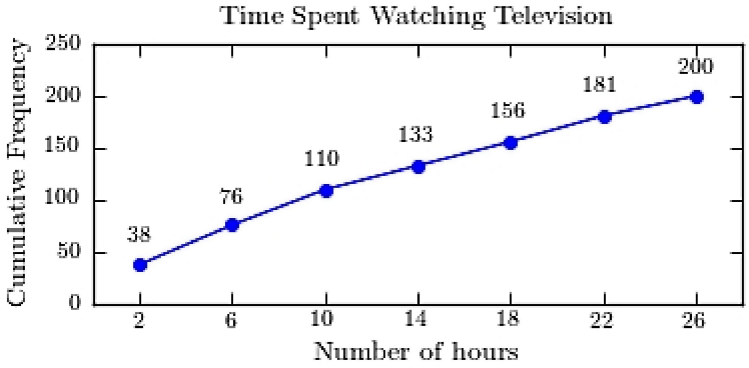
B)



C)



D)



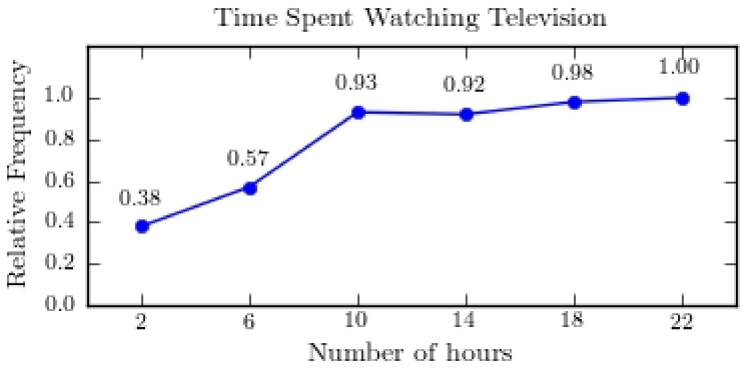
Answer: A

A sample of 200 high school students were asked how many hours per week they spend watching television. The following frequency distribution presents the results.

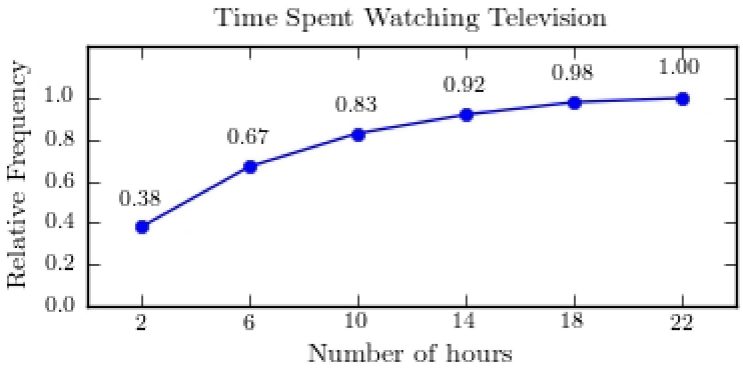
Time Spent Watching Television	
Number of hours	Frequency
0.0-3.9	76
4.0-7.9	57
8.0-11.9	32
12.0-15.9	18
16.0-19.9	13
20.0-23.9	4

Construct a relative frequency ogive for the frequency distribution.

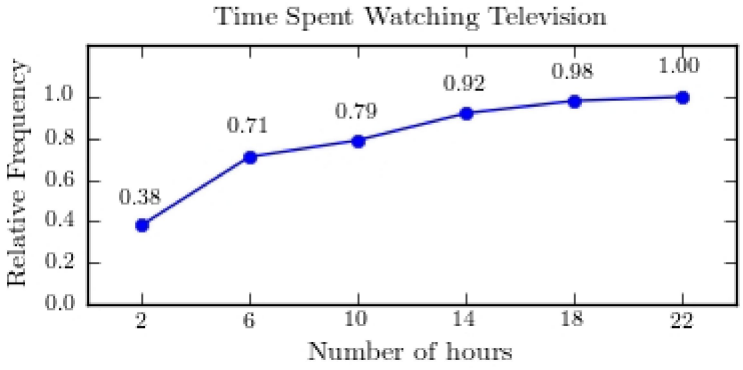
A)



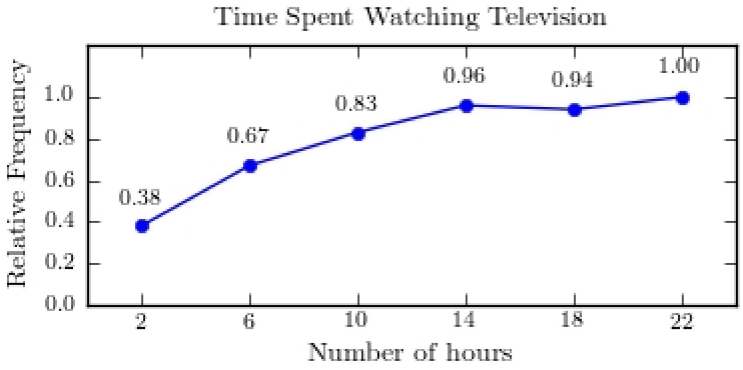
B)



C)



D)



Answer: B

Construct a stem-and-leaf plot for the following data.

28	20	54	52	26	17	31	53	40	20
51	20	28	58	40	10	25	43	40	54

A)

1	07
2	0005688
3	1
4	0003
5	123448

B)

1	07
2	000568
3	18
4	0003
5	123448

C)

1	07
2	0005688
3	1
4	0003
5	13448
6	2

D)

1	07
2	0005688
3	1
4	000
5	1233448

Answer: A

Construct a stem-and-leaf plot for the following data, in which the leaf represents the tenths place.

6.7	8.3	10.3	9.0	10.3	8.8	9.1	6.9	10.8	6.6	10.3	10.7
10.3	3.8	10.6	5.0	5.3	8.1	9.1	9.6	10.9	7.8	8.8	9.8

A)

3	8
4	
5	03
6	679
7	8
8	1388
9	01168
10	33336789

B)

3	8
4	3
5	0
6	79
7	68
8	1388
9	01168
10	33336789

C)

3	8
4	
5	03
6	679
7	8
8	1388
9	011688
10	333367
11	9

D)

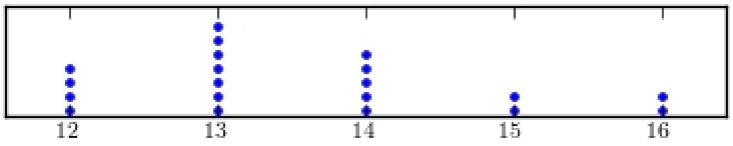
3	8
4	
5	03
6	679
7	88
8	138
9	01168
10	3336789
11	3

Answer: A

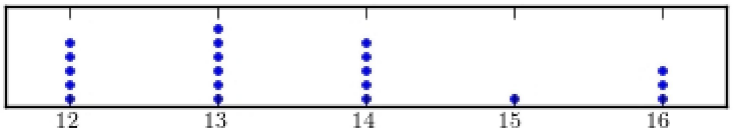
Construct a dotplot for the following data.

16	13	14	12	15	13	14	14	12	12
14	13	13	14	12	13	15	14	12	16

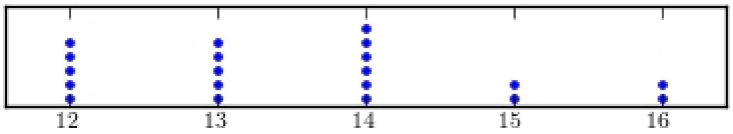
A)



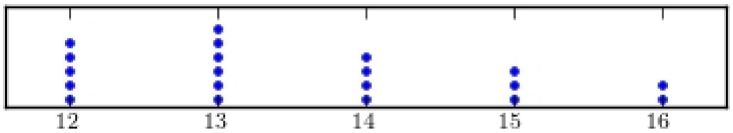
B)



C)



D)

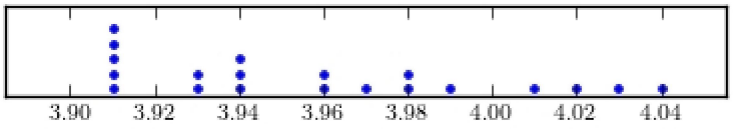


Answer: C

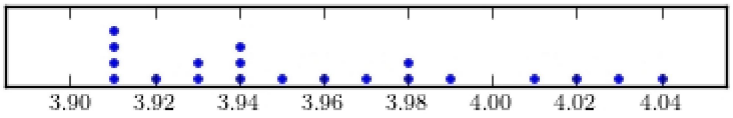
Construct a dotplot for the following data.

3.94	3.93	3.98	3.91	4.03	3.95	4.01	3.98	3.91	3.97
3.94	3.94	4.04	3.96	4.02	3.91	3.91	3.99	3.91	3.93

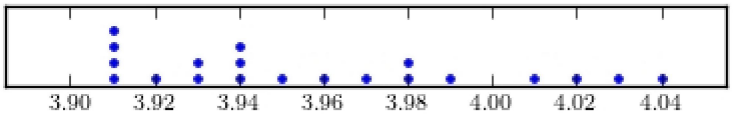
A)



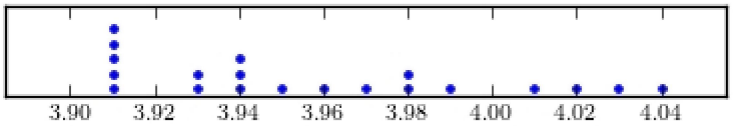
B)



C)



D)

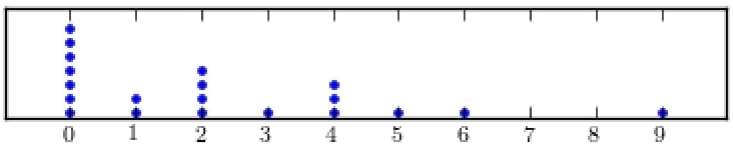


Answer: D

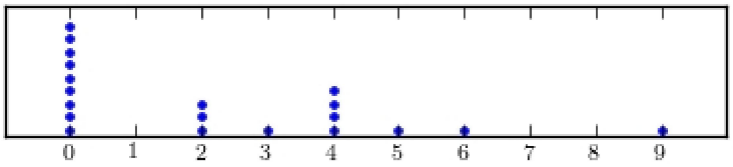
Following are the numbers of Dean's List students in a random sample of 20 university courses. Construct a dotplot for these data.

9	2	0	0	4
2	0	0	4	0
4	2	0	0	5
6	1	2	0	4

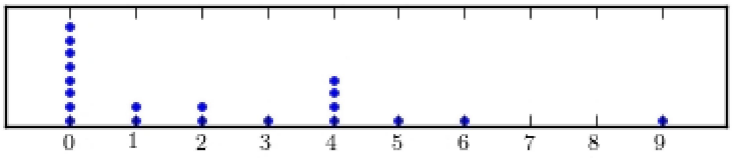
A)



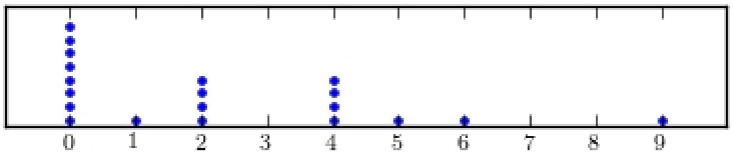
B)



C)



D)

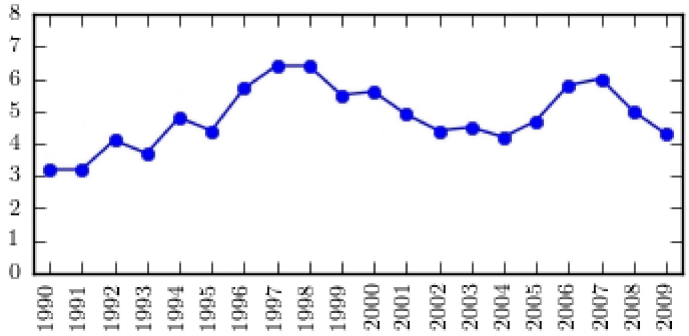


Answer: D

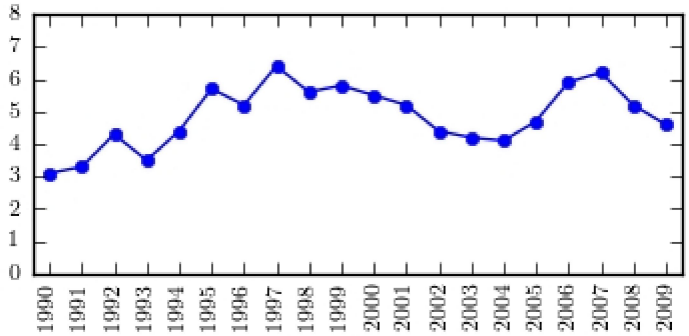
The following table presents the rate of population growth of a suburb of Atlanta, Georgia for each of the years 1990 through 2009. Construct a time-series plot of the growth rate.

Year	Percent Growth	Year	Percent Growth
1990	3.1	2000	5.5
1991	3.3	2001	5.2
1992	4.3	2002	4.4
1993	3.5	2003	4.2
1994	4.4	2004	4.1
1995	5.7	2005	4.7
1996	5.2	2006	5.9
1997	6.4	2007	6.2
1998	5.6	2008	5.2
1999	5.8	2009	4.6

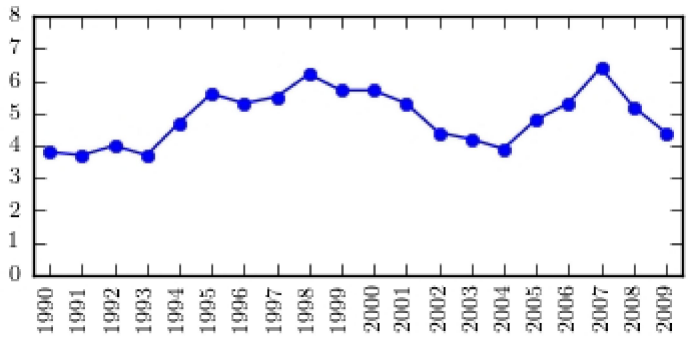
A)



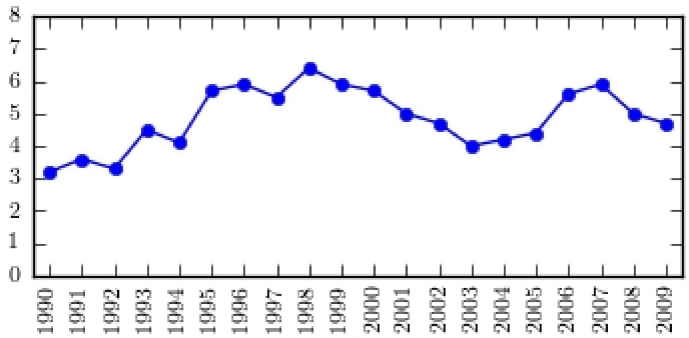
B)



C)

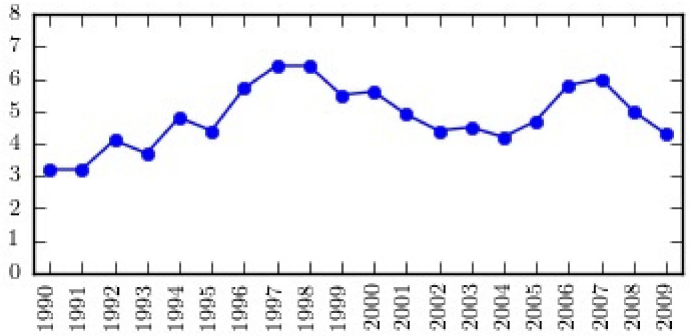


D)



Answer: B

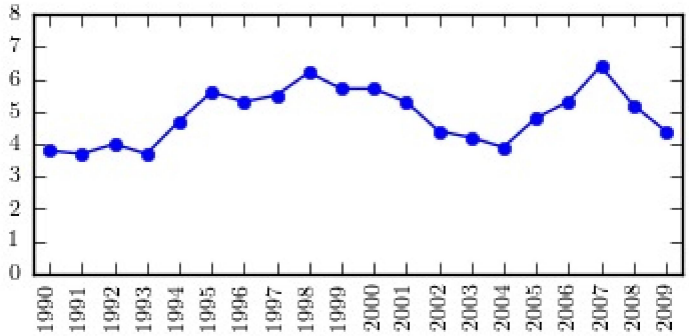
The following time-series plot presents the population growth (in percent) of a suburb of Atlanta, Georgia for each of the years 1990 through 2009. Estimate the rate of growth in 1,999.



A) 4.9%
B) 4.6%
C) 5.2%
D) 5.5%

Answer: D

The following time-series plot presents the population growth (in percent) of a suburb of Atlanta, Georgia for each of the years 1990 through 2009. Estimate the amount by which the rate of growth changed from 1,995 to 2,004.

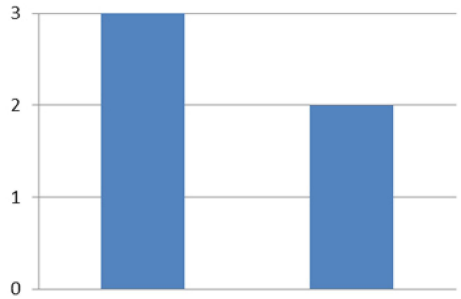


A) about -1.9 percentage points
B) about -2.9 percentage points
C) about -1.0 percentage points
D) about -1.3 percentage points

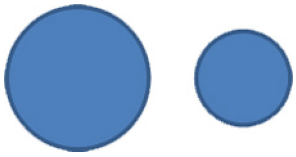
Answer: A

The amounts 3 and 2 are compared. Which of the following graphical displays are the least misleading?

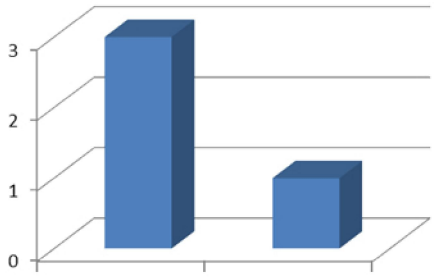
A)



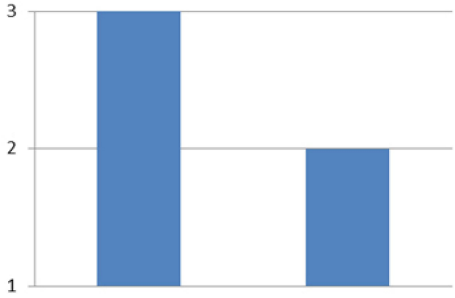
B)



C)



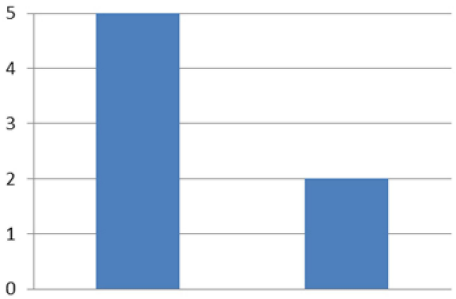
D)



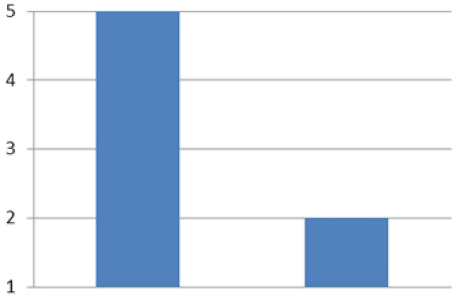
Answer: A

The amounts 5 and 2 are compared. Which of the following graphical displays are the least misleading?

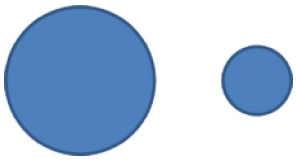
A)



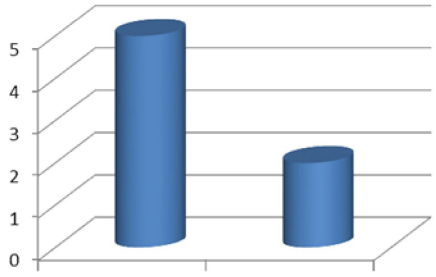
B)



C)



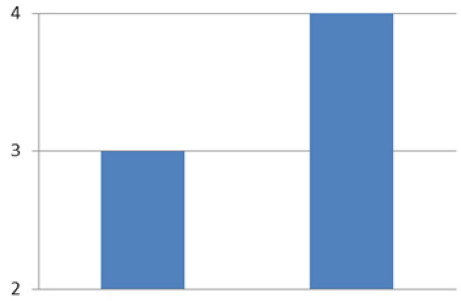
D)



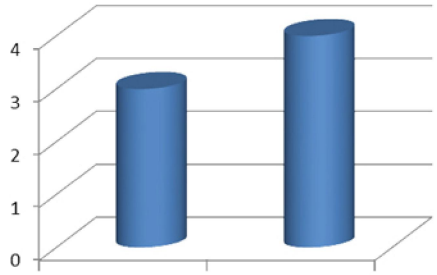
Answer: A

The amounts 3 and 4 are compared. Which of the following graphical displays are the least misleading?

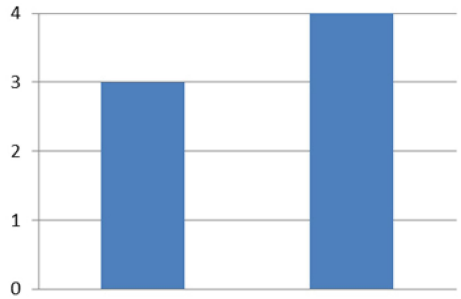
A)



B)



C)

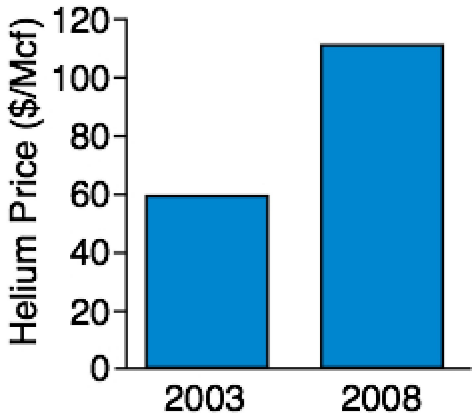


D)

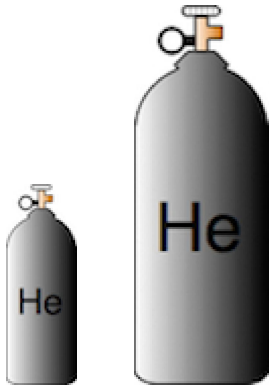
Answer: C

Helium prices: The cost of grade A Helium gas in 2003 was around $60/Mcf. Five years later it reached around $115/Mcf. Which of the following graphs accurately represents the magnitude of the increase? Which one exaggerates it?

A)



B)



Answer: A

Gravity on Mars: The gravity on Earth is around $\frac{2}{3}$'s stronger than the gravity on Mars.

Which of the following graphics compare the gravity differences more accurately, and why?

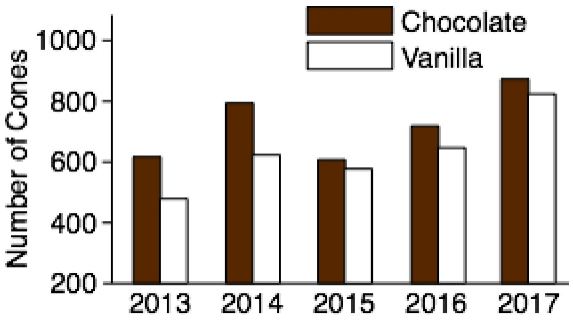
A)

B)

Answer: A

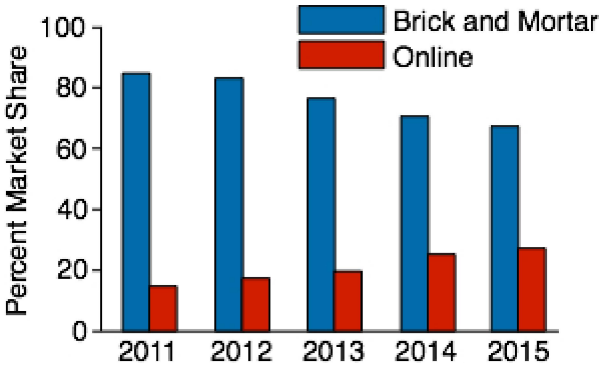
SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Chocolate or vanilla: The following bar graph shows the number of chocolate and vanilla ice cream cones sold during the annual county fair for the years 2013 - 2017. Does the graph present an accurate picture of the difference between chocolate and vanilla cones sold? Or is it misleading? Explain.



Answer: Misleading

Toy sales: The following graph presents the percent market share for the US Toy Retail Sales between brick and mortar toy sales and online sales for the years 2011-2015. Does the graph present an accurate picture of the differences in revenue from these two sources? Or is it misleading? Explain.



Answer: Accurate