AP Statistics

Write your questions and thoughts here!

1.6 Descriptions for One Quantitative Variable Distributions

1.6 Notes

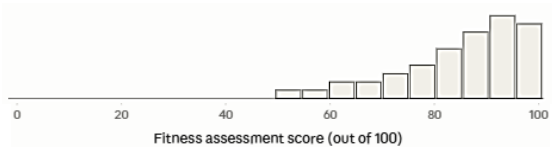
Mad Gainz fitness center offers four different group training classes. At the end of each class, participants complete a 100-point fitness assessment. The four classes are:

Class 1: Beginner Cardio
Class 2: Advanced Cardio
Class 3: Beginner Cardio with Visiting Instructors
Class 4: Open Cardio Class, All Levels Welcome

Match each class to its distribution shown below.

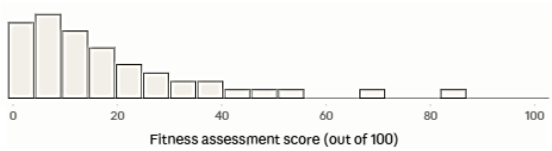
DISTRIBUTIONS

Skewed Left



Class:

Skewed Right

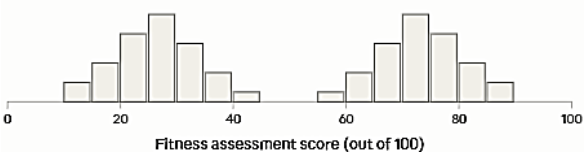


Class:

Unimodal

Class:

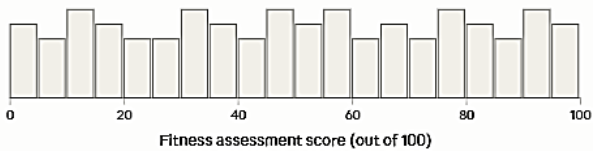
Bimodal



Class:

Mad Gainz assessed a fifth class and got the histogram to the right. What kind of class do you think would generate this type of distribution?

Uniform



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Write your questions and thoughts here!

Describe Distributions by using CUSS in Context!

C

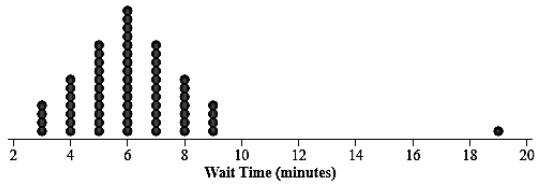
U

S

S

Context:

A coffee shop recorded the wait time, in minutes, for 60 customers during a weekday morning rush. Wait time is shown in the dotplot below. Describe the distribution using CUSS.



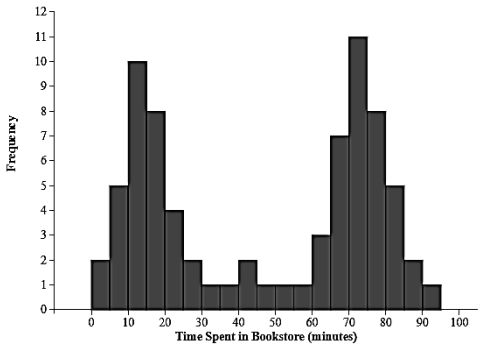
Twenty-three commercial pilot trainees took a 40-point practical exam in a flight simulator. Their scores are shown in the stem plot below. Describe the distribution using CUSS.

1	8
2	1 2
2	5 6 6
3	0 2 3 4 4
3	5 5 6 6 7 7 8 8 9 9
4	0 0

Flight Simulator Exam Scores

KEY: 410 = 40 points

A bookstore tracked how long customers stayed during a Saturday afternoon. An employee claims: "On Saturday afternoon most customers stop by for a quick errand spending less than 20 minutes in the store". Does the histogram support this claim?



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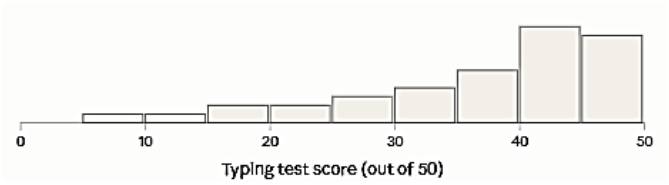
1.6 Descriptions for One Quantitative Variable Distributions

1.6 Practice

AP Statistics

Describe the distributions shown below using CUSS in Context.

1.



Center =

Unusual =

Shape =

Spread =

2.

5	8 9
6	0 2 3 4 5 5 6 7 8 9
7	0 1 2 2 3 4 5 6
8	1 2

Key: 6 | 2 = a resting heart rate of 62 bpm

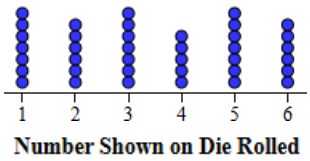
Center =

Unusual =

Shape =

Spread =

3.



Center =

Unusual =

Shape =

Spread =

4.

Center =

Unusual =

Shape =

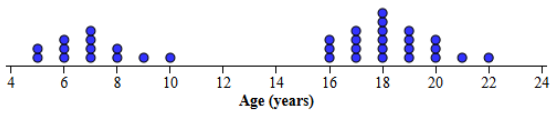
Spread =

3	6
4	
4	
5	
5	5 6 7 8 8 9
6	0 0 0 1 1 2 2 3 4
6	6 7 8 8 9
7	0 1 2
7	5 6
8	1

Retirement Age

KEY: 8|1 = 81

5.



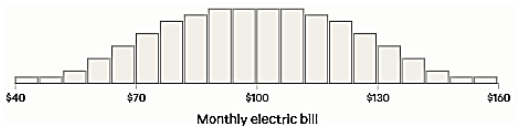
Center =

Unusual =

Shape =

Spread =

6.



Center =

Unusual =

Shape =

Spread =

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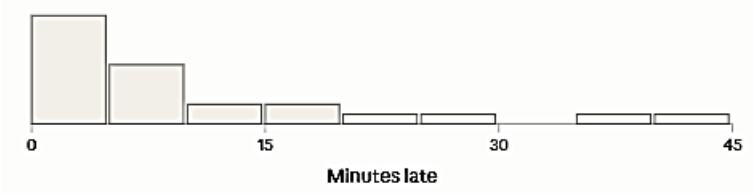
Use complete sentences to answer the following. CUSS in Context!

7. A commuter train's arrival delay (minutes late) was recorded over 25 mornings. Describe the distribution of minutes late.



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8. Twenty experienced orchestra musicians took a 100-point music theory placement exam while auditioning for a symphony. Describe the distribution of scores.

5	5
6	8
7	2 5 8
8	0 1 3 4 5 6 7 8 9 9
9	0 1 2 3 5

Key: 8 | 5 = a placement exam score of 85

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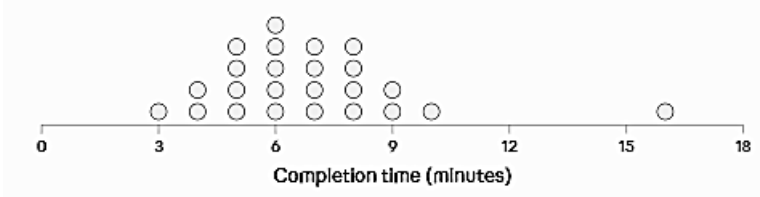
9. Twenty-four fourth-grade students completed a multiplication worksheet, and their completion time was recorded. One student was called to the nurse partway through. Describe the distribution of completion time.



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Use complete sentences to answer the following.

10. Smogville's environmental office recorded the daily Air Quality Index (AQI) over 40 days. A breakdown of the AQI scale is given below.

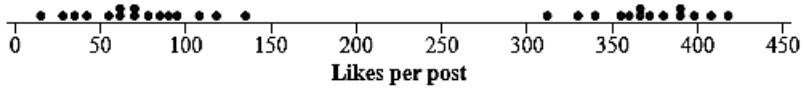
    A local news segment claims: "Smogville's air is unhealthy on most days."

    Using the histogram, determine whether the data support this claim. Justify your answer using specific features of the graph.

AQI Range	Category
0-50	Good
51-100	Moderate
101-150	Unhealthy for Sensitive Groups
151-200	Unhealthy
201-300	Very Unhealthy
301-500	Hazardous

---

11. Fleetwood Mac has launched a candle line, and the marketing team is tracking Instagram engagement for the brand's two flagship scents: *Stevie Wicks* and *Go Your Own Wax*. Posts alternate between the two candles, sometimes as regular photos and sometimes as paid promotions to reach a wider audience. A marketing consultant reviewing the account's analytics recorded the number of likes on a sample of 30 posts from the past three months. The dotplot below displays the results.



The consultant claims: "This account's engagement falls into two very different tiers. Some posts perform far better than others, with a clear gap between the two groups."

Based on the dotplot, determine whether the data support the consultant's claim. Justify your answer using specific features of the graph.

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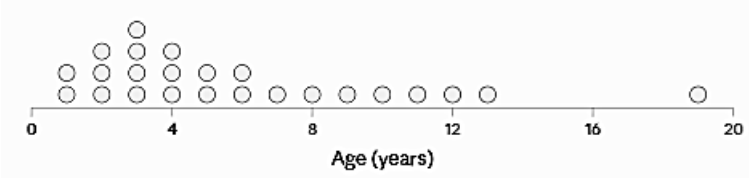
1.6 Descriptions for One Quantitative Variable Distributions

MULTIPLE CHOICE

1.6 Test Prep

For questions 12-14 use the following scenario.

A community center held a free pet vaccination clinic. A volunteer recorded the age, in years, of each of 24 pets brought in. The dotplot below shows the results.



12. Which of the following best describes the shape of the distribution?

(A) Approximately symmetric

(B) Skewed left

(C) Skewed right

(D) Bimodal

---

13. Which of the following best describes an unusual feature of this distribution?

(A) There is a possible outlier at age 1, well below the rest of the ages.

(B) There is a possible outlier at age 19. Well above the rest of the ages.

(C) There is a gap between ages 6 and 7.

(D) There is a cluster of pets between ages 14 and 18.

---

14. A clinic volunteer claims, "Nearly all of the pets at the clinic were 10 years or older." Which of the following best evaluates this claim using the dotplot?

(A) The claim is supported, since the oldest pet was 19 years old.

(B) The claim is supported, since most of the dots fall to the right of age 10.

(C) The claim is not supported, since the distribution is skewed right.

(D) The claim is no supported, since only about 4 of the 24 pets were age 10 or older.

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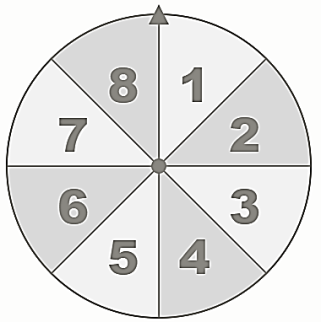
15. A fair spinner is numbered 1 through 8, with each number occupying an equal-sized section of the spinner. If a large number of spins were recorded and graphed, which shape would you expect the distribution to take?



(A) Unimodal – Approximately Symmetric

(B) Bimodal

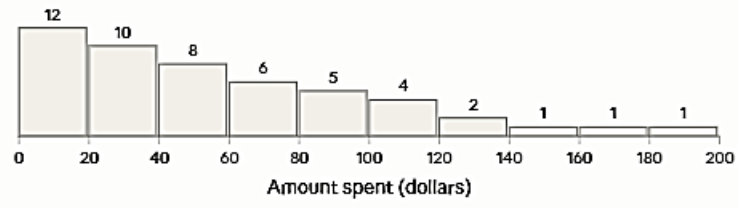
(C) Positively or Negatively Skewed

(D) Uniform

---

16. The histogram below shows the amount spent, in dollars, by 50 customers during a single visit to a hardware store. The frequency for each bin is labeled above its bar.

Based on the histogram, which interval contains the center of this distribution?



(A) 0 to 20 dollars

(B) 20 to 40 dollars

(C) 40 to 60 dollars

(D) 60 to 80 dollars

---

17. A manager recorded how many minutes late each of 20 employees arrived to a Monday morning staff meeting. The stemplot above shows the results.

Which of the following best describes the shape of this distribution?

0	0 0 1 1 2 2 2 3 3 4 4 5 6 7 8
1	0 2 5
2	0 8

Key: 1 | 2 = arrived 12 minutes late

(A) Approximately symmetric

(B) Negatively Skewed

(C) Positively Skewed

(D) Bimodal

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