

**Practice
15-1****Statistical Questions**

1. Why is the following a statistical question?

How many plays do students see in a year?

- A. Some students might not like seeing plays.
- B. Different students can see different numbers of plays in a year.
- C. Some students might not see any plays in a year.
- D. The question asks about only one year.

2. You want to learn about the recycling habits of people in your neighborhood. Which of the following is a statistical question for this situation?

- A. How many cans did your family recycle last week?
- B. How many cans did your family recycle last month?
- C. How many times did your neighbors recycle cardboard last month?

3. Which of the questions, if any, are statistical?

1. Does the largest parking garage in Chicago have more than four floors?

2. How much do drivers spend on gasoline in a week?

3. How many glass bottles does Joe use in a month?

- A. only question 3
- B. only question 1
- C. only questions 2 and 3
- D. only questions 1 and 3
- E. only question 2
- F. only questions 1 and 2
- G. all three questions
- H. none of the questions

4. Is the following question statistical? Explain.

How do shoppers in a town pay for their groceries?

5. Some children were playing at the park yesterday. A parent later recalled that some of the children were wearing the kinds of clothing listed at the right. Which of the following questions could the parent answer? Check all that apply.

- A. Were there more boys than girls at the park?
- B. What was the weather like at the park yesterday?
- C. How long was each child playing at the park?
- D. What time of day were the children playing at the park?

light jacket
light jacket
short sleeves
heavy jacket
sweater
light jacket
heavy jacket
long pants

6. A factory processes tomatoes from several farms. A manager at the factory wants to know whether the harvest from these farms will be good this year. Which of the following could the manager statistically study to get useful information about this? Check all that apply.

- A. the number of fields the farms have
- B. the geography of the farms
- C. the amount of rain the farms get
- D. the amount of fertilizer the farmers use

7. **Writing** You want to study how the students in your class spend their free time. *one*

a) Give ~~two~~ examples of questions that are statistical.

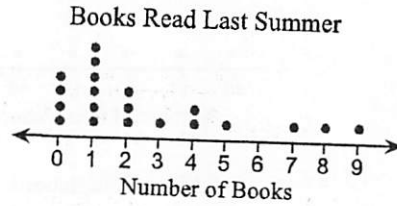
one
b) Give ~~two~~ examples of questions that are not statistical.

~~7. Write how the two kinds of questions differ.~~

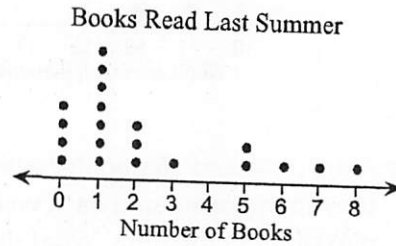
**Practice
15-2**

Dot Plots

1. A teacher asked 20 students how many books they read last summer. The dot plot displays the data. What is the greatest number of books a student read?

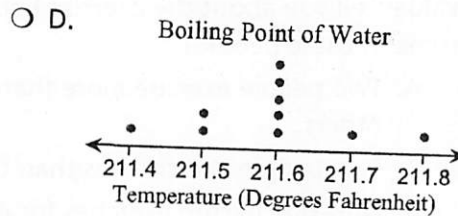
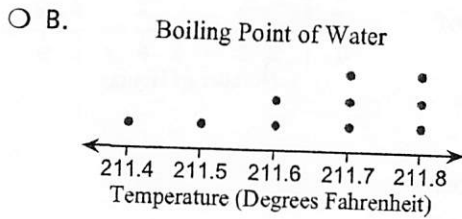
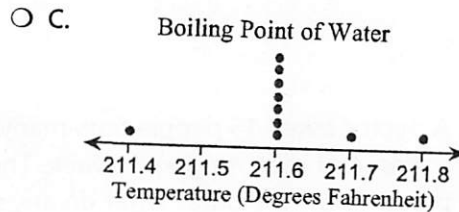
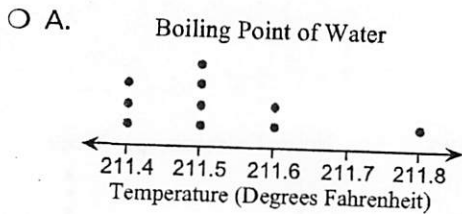


2. A teachers asked 20 students how many books they read last summer. The dot plot displays the data. How many of the students read exactly 5 books?



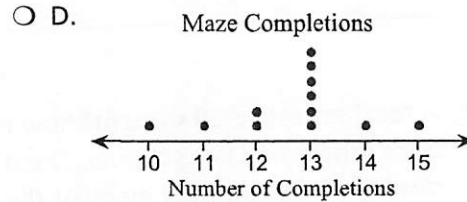
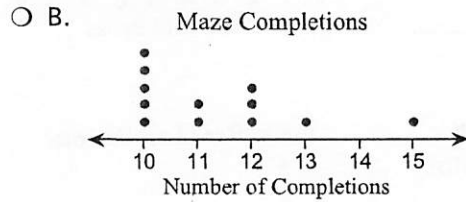
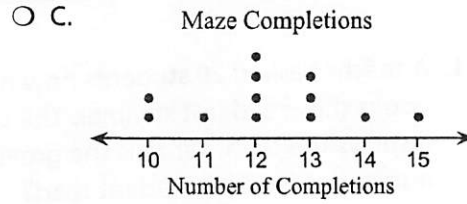
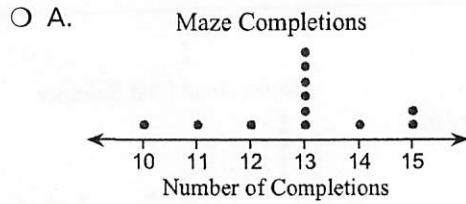
3. A scientist measured the temperature at which water boils. The table shows the results for 10 measurements. Which dot plot represents the data?

Boiling Point of Water (°F)				
211.6	211.5	211.6	211.4	211.5
211.7	211.6	211.6	211.6	211.8

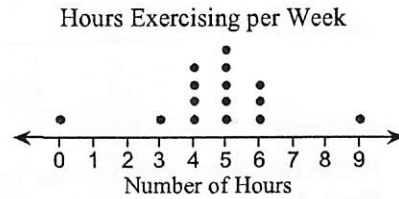


4. Researchers recorded the number of times lab rats completed a maze in 30 minutes. The table shows the data for 12 rats. Which dot plot represents the data?

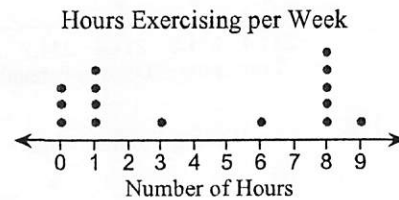
Maze Completions			
12	12	15	10
14	12	10	13
12	13	11	13



5. A doctor asked 15 people how many hours they spend exercising each week. The dot plot displays the data. What do any clusters and gaps in the dot plot tell you about the exercise habits of these people?

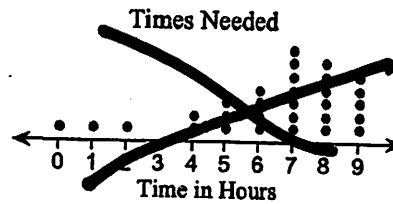


6. A doctor asked 15 people how many hours they spend exercising each week. The dot plot displays the data. What do any stray values tell you about the exercise habits of some of these people?

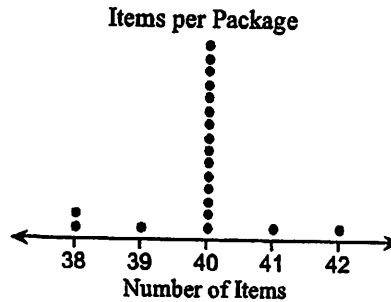


- A. Two people exercise more than the others.
- B. Two people exercise less than the others.
- C. Only one person exercises for 4 hours.
- D. Two people exercise more than some, but less than others.

~~Writing Describe the pattern in the dot plot. Then write about a situation that this data could represent. Explain why your situation has this pattern.~~



8. Reasoning A machine is designed to place 40 items in each package. A manager opened 20 packages and counted the number of items in each. The dot plot displays the data.

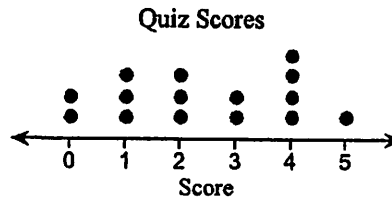


a) How many of the 20 packages did not contain 40 items?

b) How many items would you expect to find in a package?

~~c) What would the manager expect to find in a package?~~

9. Error Analysis The dot plot shows the scores for 15 students on a 5-point quiz. The teachers stated that 7 of the students passed the quiz. One student incorrectly claimed that the lowest passing score for this quiz was 4 points.



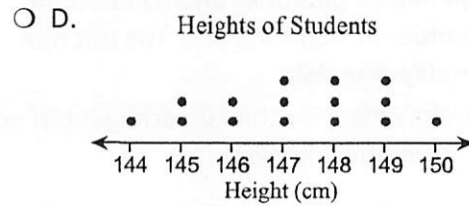
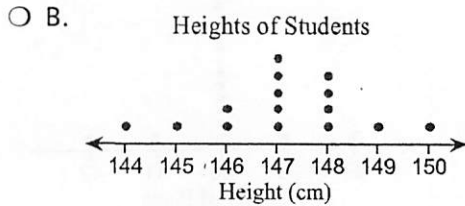
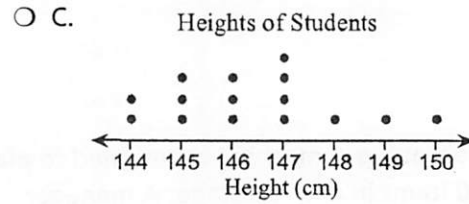
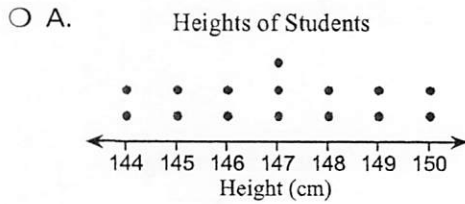
a) What was the correct lowest passing score for this quiz?

b) Which statement best describes the student's error?

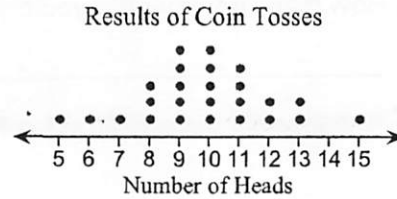
- A. The student found the lowest passing score if 7 students failed the quiz.
- B. The student found the score that the least number of students earned.
- C. The student found the highest failing score instead of the lowest passing score.
- D. The student found the score that the greatest number of students earned.

10. **Heights** A science class measured the heights of 15 students in centimeters. The table shows the data. Which dot plot represents the data?

148	146	147	145	147
150	147	146	147	149
148	148	147	144	148

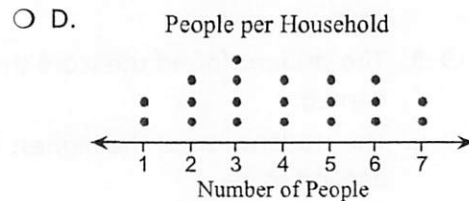
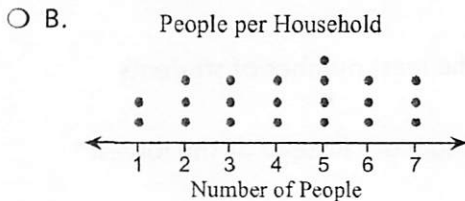
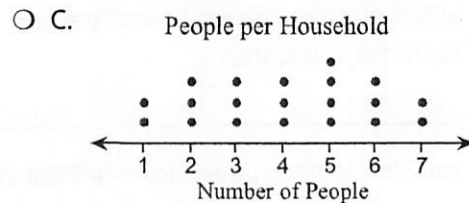
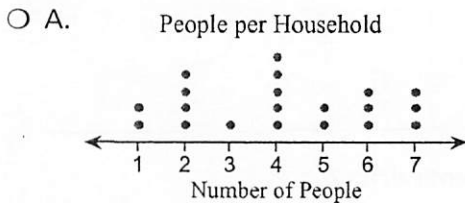


11. **Mental Math** The 25 students in a math class took turns flipping a coin 20 times each. The teacher recorded the number of times the result was heads. The dot plot displays the data. How many students got 7 or 8 heads in 20 flips?



12. The data in the table show the number of people in each of 20 households in a neighborhood. Which dot plot represents the data?

4	5	7	5	6
3	3	1	2	2
6	7	5	1	3
2	6	5	4	4



**Practice
15-1**

Statistical Questions

1. Why is the following a statistical question?

How many plays do students see in a year?

- A. Some students might not like seeing plays.
- B. Different students can see different numbers of plays in a year.
- C. Some students might not see any plays in a year.
- D. The question asks about only one year.

2. You want to learn about the recycling habits of people in your neighborhood. Which of the following is a statistical question for this situation?

- A. How many cans did your family recycle last week? - 1 Answer
- B. How many cans did your family recycle last month? - 1 Answer
- C. How many times did your neighbors recycle cardboard last month? - Many Answers

3. Which of the questions, if any, are statistical?

- 1. Does the largest parking garage in Chicago have more than four floors? - Yes or No
 - 2. How much do drivers spend on gasoline in a week? - Many Answers 1 Answer
 - 3. How many glass bottles does Joe use in a month? - 1 Answer
- A. only question 3
 - B. only question 1
 - C. only questions 2 and 3
 - D. only questions 1 and 3
 - E. only question 2
 - F. only questions 1 and 2
 - G. all three questions
 - H. none of the questions

4. Is the following question statistical? Explain.

How do shoppers in a town pay for their groceries?

Many Answers : cash, credit, debit, gift card etc...

STATISTICAL

5. Some children were playing at the park yesterday. A parent later recalled that some of the children were wearing the kinds of clothing listed at the right. Which of the following questions could the parent answer? Check all that apply.

- A. Were there more boys than girls at the park?
- B. What was the weather like at the park yesterday?
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6. A factory processes tomatoes from several farms. A manager at the factory wants to know whether the harvest from these farms will be good this year. Which of the following could the manager statistically study to get useful information about this? Check all that apply.

- A. the number of fields the farms have
- B. the geography of the farms
- C. the amount of rain the farms get
- D. the amount of fertilizer the farmers use

7. **Writing** You want to study how the students in your class spend their free time.

a) Give ~~two~~^{one} examples of questions that are statistical.

How many hours of TV do students in my class watch?

b) Give ~~two~~^{one} examples of questions that are not statistical.

How many hours does Tim spend on the computer?

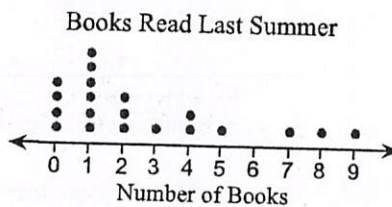
~~Give two examples of questions that are not statistical.~~

**Practice
15-2**

Dot Plots

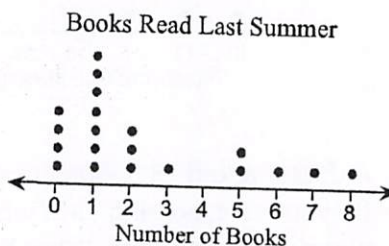
1. A teacher asked 20 students how many books they read last summer. The dot plot displays the data. What is the greatest number of books a student read?

9 books



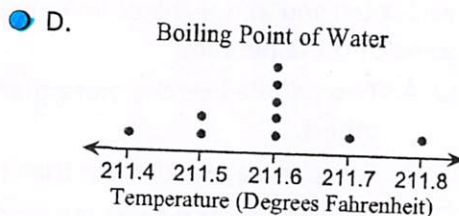
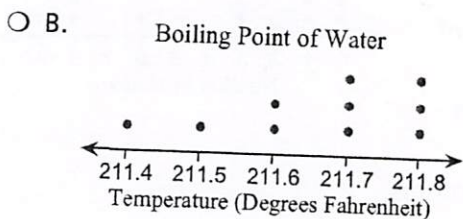
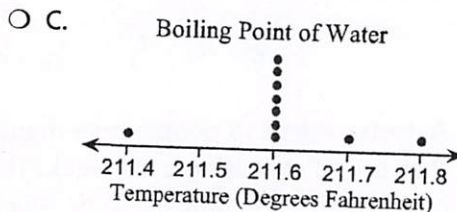
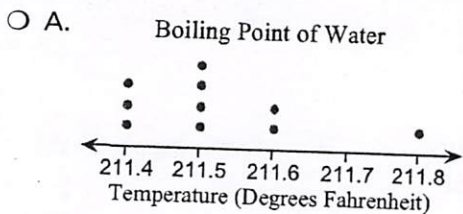
2. A teachers asked 20 students how many books they read last summer. The dot plot displays the data. How many of the students read exactly 5 books?

2 students



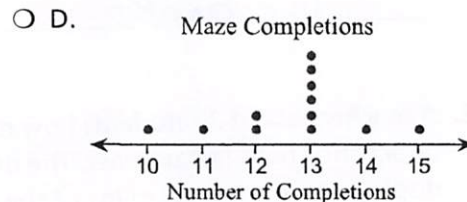
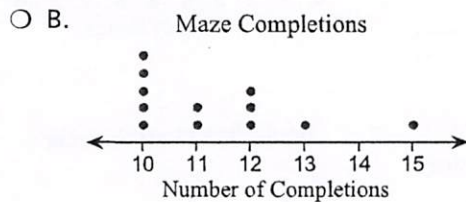
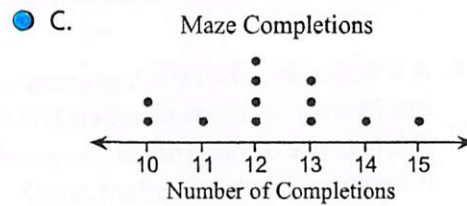
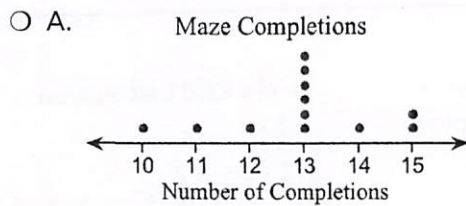
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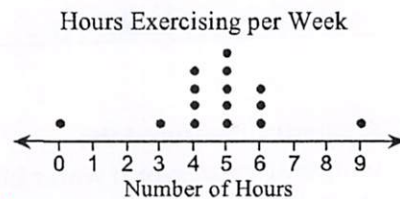


4. Researchers recorded the number of times lab rats completed a maze in 30 minutes. The table shows the data for 12 rats. Which dot plot represents the data?

Maze Completions			
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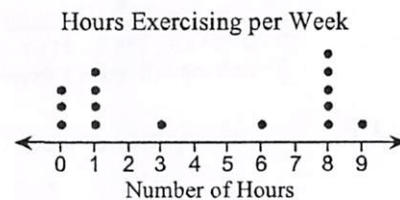


5. A doctor asked 15 people how many hours they spend exercising each week. The dot plot displays the data. What do any clusters and gaps in the dot plot tell you about the exercise habits of these people?



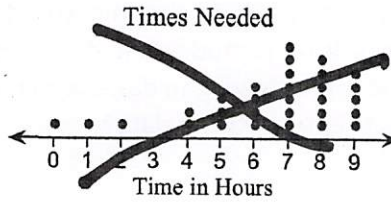
Most people exercised between 4 and 6 hours.
No one exercised between 1 and 2 hours and 7 and 8 hours!

6. A doctor asked 15 people how many hours they spend exercising each week. The dot plot displays the data. What do any stray values tell you about the exercise habits of some of these people?



- A. Two people exercise more than the others.
- B. Two people exercise less than the others.
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~~Writing Describe the pattern in the dot plot. Then write about a situation that this data could represent. Explain why your situation has this pattern.~~



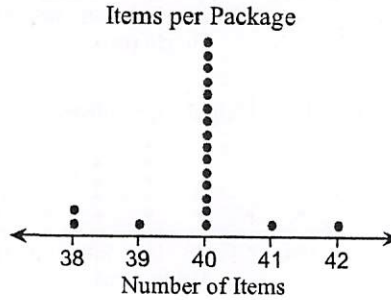
8. Reasoning A machine is designed to place 40 items in each package. A manager opened 20 packages and counted the number of items in each. The dot plot displays the data.

a) How many of the 20 packages did not contain 40 items?

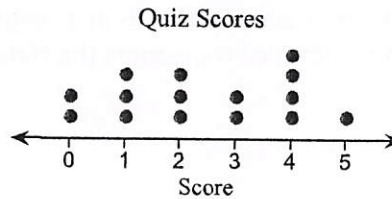
5 packages

b) How many items would you expect to find in a package?

Hopefully 40



9. Error Analysis The dot plot shows the scores for 15 students on a 5-point quiz. The teachers stated that 7 of the students passed the quiz. One student incorrectly claimed that the lowest passing score for this quiz was 4 points.



a) What was the correct lowest passing score for this quiz?

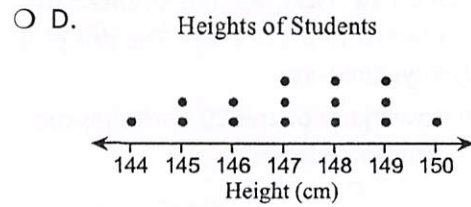
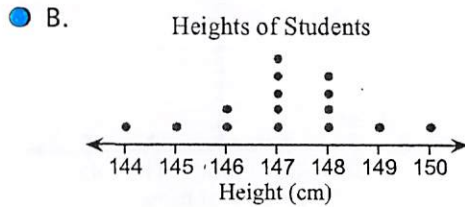
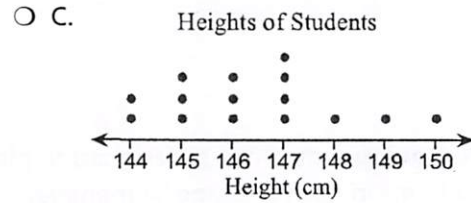
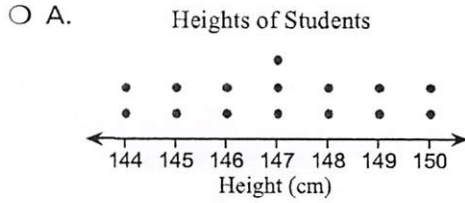
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b) Which statement best describes the student's error?

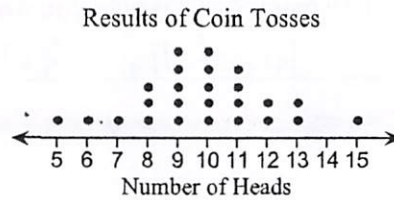
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10. **Heights** A science class measured the heights of 15 students in centimeters. The table shows the data. Which dot plot represents the data?

Heights of Students in Centimeters				
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148	148	147	144	148



11. **Mental Math** The 25 students in a math class took turns flipping a coin 20 times each. The teacher recorded the number of times the result was heads. The dot plot displays the data. How many students got 7 or 8 heads in 20 flips?



4 Students

12. The data in the table show the number of people in each of 20 households in a neighborhood. Which dot plot represents the data?

People per Household				
4	5	7	5	6
3	3	1	2	2
6	7	5	1	3
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