



Year 8 Worksheet 10: Investigating Data

Question 1: Answer the following.

1	<p>What is the mode of the following set of numbers: 4, 4, 5, 6, 5, 7, 5, 8, 5, 9, 6, 8.</p> <p>A. 4 B. 5 C. 6 D. 7</p>
2	<p>Find the mean of the numbers: 12, 18, 24, 30, 36.</p> <p>A. 24 B. 26 C. 30 D. 32</p>
3	<p>Calculate the range of the data set: 15, 22, 10, 27, 14.</p> <p>A. 13 B. 15 C. 17 D. 20</p>
4	<p>What is the median of the following numbers: 8, 5, 12, 7, 9, 10.</p> <p>A. 8.5 B. 9.5 C. 8 D. 9</p>



5	<p>In a survey of ages of people in a town, the mean age is 35 years, and the median age is 32 years. What can you conclude about the age distribution?</p> <p>A. The ages are evenly distributed. B. The ages are all the same. C. There are a few very old people in the town. D. There are a few very young people in the town.</p>										
6	<p>Refer to this stem-and-leaf plot to answer question 6 - 9.</p> <table style="margin-left: auto; margin-right: auto;"><thead><tr><th style="border-right: 1px solid black; padding: 5px;">Stem</th><th style="padding: 5px;">Leaf</th></tr></thead><tbody><tr><td style="border-right: 1px solid black; text-align: center; padding: 5px;">3</td><td style="text-align: center; padding: 5px;">0 0 4 5</td></tr><tr><td style="border-right: 1px solid black; text-align: center; padding: 5px;">4</td><td style="text-align: center; padding: 5px;">1 1 1 6 9</td></tr><tr><td style="border-right: 1px solid black; text-align: center; padding: 5px;">5</td><td style="text-align: center; padding: 5px;">2 9 9</td></tr><tr><td style="border-right: 1px solid black; text-align: center; padding: 5px;">6</td><td style="text-align: center; padding: 5px;">3 8</td></tr></tbody></table> <p>What is the mode?</p> <p>A. 30 B. 41 C. 59 D. 68</p>	Stem	Leaf	3	0 0 4 5	4	1 1 1 6 9	5	2 9 9	6	3 8
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3	0 0 4 5										
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7	<p>What is the median?</p> <p>A. 43.5 B. 41 C. 45.3 D. 45</p>										



8	<p>What is the range?</p> <p>A. 83 B. 68 C. 60 D. 38</p>
9	<p>What is the mean?</p> <p>A. 47.51 B. 45.71 C. 47.54 D. 41.57</p>
10	<p>If the mean of three numbers is 15, and two of the numbers are 10 and 20, what is the third number?</p> <p>A. 5 B. 10 C. 15 D. 20</p>



Question 2: Answer the following.

1

The scores of a bowling team during a game were:

54 76 72 59 64 49 73 60 76 57 68 48 68 46 60 69 41 41 59 74 56

a. Construct an ordered stem-and-leaf plot to display the data.

b. What was the highest score?

c. Which score was an outlier?

d. What was the median score?

e. What was the mode score?

f. What was the range score?

g. What was the mean score, round to four decimal places?

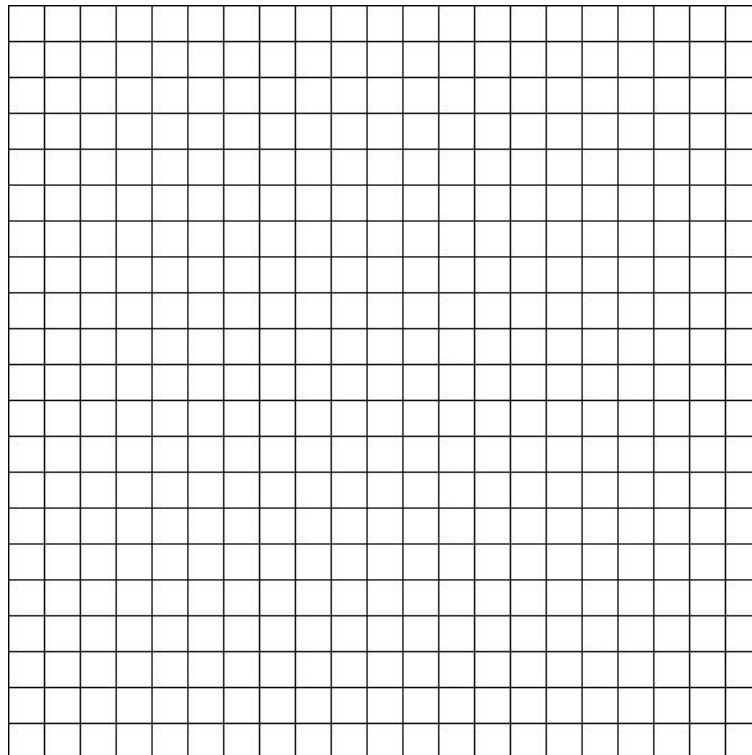


2

A group of people was surveyed on the number of pets in their house. The results are presented in the frequency table below:

No. of Pets	Frequency
1	10
2	17
3	20
4	13
5	2
6	4

a. Draw a frequency histogram and polygon for this data.





b. How many people were surveyed?

c. Where were the scores clustered?

d. What is the mode of the data?

e. What is the range of the data?

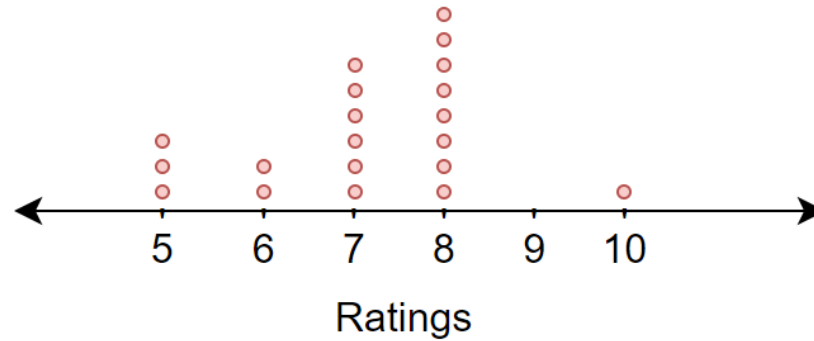
f. What type of data is this: categorical or numerical? Why?

g. If you randomly selected a household from this survey, what is the probability that they have 3 or more pets?



3

This dot plot illustrates the customer ratings for the new smartphone.



a. Find the sample size.

b. Find the median.

c. What is the mode?

d. What is the outlier?

e. What is the range?



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Answer Key

Question 1: Answer the following.

1	<p>What is the mode of the following set of numbers: 4, 4, 5, 6, 5, 7, 5, 8, 5, 9, 6, 8?</p> <p>A. 4 B. 5 C. 6 D. 7</p> <p>Answer: B. 5</p>
2	<p>Find the mean of the numbers: 12, 18, 24, 30, 36.</p> <p>A. 24 B. 26 C. 30 D. 32</p> <p>Answer: A. 24</p>
3	<p>Calculate the range of the data set: 15, 22, 10, 27, 14.</p> <p>A. 13 B. 15 C. 17 D. 20</p> <p>Answer: C. 17</p>
4	<p>What is the median of the following numbers: 8, 5, 12, 7, 9, 10?</p> <p>A. 8.5 B. 9.5 C. 8 D. 9</p> <p>Answer: A. 8.5</p>



5	<p>In a survey of ages of people in a town, the mean age is 35 years, and the median age is 32 years. What can you conclude about the age distribution?</p> <p>A. The ages are evenly distributed. B. The ages are all the same. C. There are a few very old people in the town. D. There are a few very young people in the town.</p> <p>Answer: D. There are a few very young people in the town.</p>										
6	<p>Refer to this stem-and-leaf plot to answer question 6 - 9.</p> <table><thead><tr><th>Stem</th><th>Leaf</th></tr></thead><tbody><tr><td>3</td><td>0 0 4 5</td></tr><tr><td>4</td><td>1 1 1 6 9</td></tr><tr><td>5</td><td>2 9 9</td></tr><tr><td>6</td><td>3 8</td></tr></tbody></table> <p>What is the mode?</p> <p>A. 30 B. 41 C. 59 D. 68</p> <p>Answer: B. 41</p>	Stem	Leaf	3	0 0 4 5	4	1 1 1 6 9	5	2 9 9	6	3 8
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8	<p>What is the range?</p> <p>A. 83 B. 68 C. 60 D. 38</p> <p>Answer: D. 38</p>
9	<p>What is the mean?</p> <p>A. 47.51 B. 45.71 C. 47.54 D. 41.57</p> <p>Answer: B. 45.71</p>
10	<p>If the mean of three numbers is 15, and two of the numbers are 10 and 20, what is the third number?</p> <p>A. 5 B. 10 C. 15 D. 20</p> <p>Answer: C. 15</p>



Question 2: Answer the following.

1

a.

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

b. The highest score was 76.

c. There are no clear outliers in this data set.

d. To find the median score, we first need to arrange the scores in ascending order:

41, 41, 46, 48, 49, 54, 56, 57, 59, 59, 60, 60, 64, 68, 68, 69, 72, 73, 74, 76, 76

Median = 60.

e. No mode score.

f. Range = $76 - 41 = 35$.

g. To find the mean score, we sum up all the scores and divide by the number of scores:

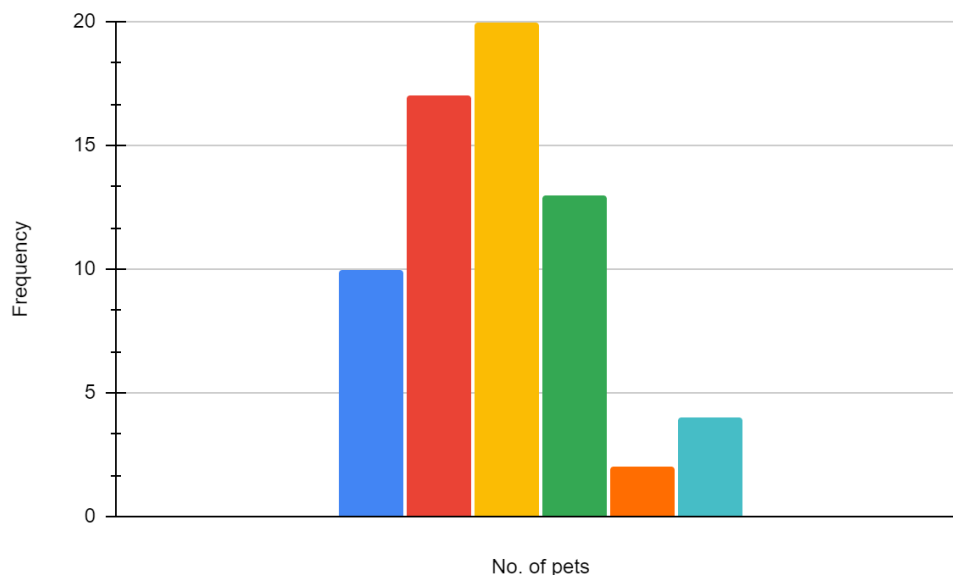
Mean = $41 + 41 + 46 + 48 + 49 + 54 + 56 + 57 + 59 + 59 + 60 + 60 + 64 + 68 + 68 + 69 + 72 + 73 + 74 + 76 + 76 = 1364/21$

Mean ≈ 65.0476 (rounded to four decimal places)



2

a. Draw a frequency histogram and polygon for this data.



b. How many people were surveyed?

- 66 people

c. Where were the scores clustered?

- 2 and 3

d. What is the mode of the data?

- 3 with the frequency of 20

e. What is the range of the data?

- Range = $6 - 1 = 5$

f. What type of data is this: categorical or numerical? Why?

- This data is numerical data because it deals with quantities (the number of pets) that can be measured and subjected to mathematical operations. Specifically, it's discrete numerical data since the number of pets is a count.

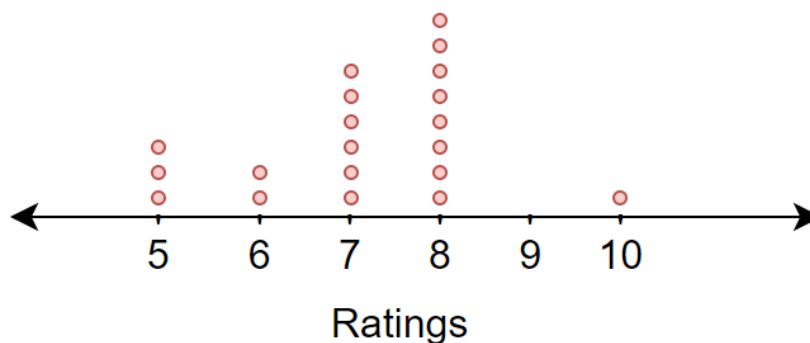


g. If you randomly selected a household from this survey, what is the probability that they have 3 or more pets?

- Total households with 3 or more pets = $20 + 13 + 2 + 4 = 39$
- Total households surveyed = 66
- Probability = $39 / 66$

3

This dot plot illustrates the customer ratings for the new smartphone.



a. Find the sample size.

- 20

b. Find the median.

- 7

c. What is the mode?

- 8

d. What is the outlier?

- 10

e. What is the range?

- $10 - 5 = 5$