

Name: Answers

1. The median house price in Red Deer, Alberta, is \$319 100.00. What does this tell you about the housing market?

- a. Half the homes in Red Deer cost more than \$319 100.00 and half cost less than \$319 100.00.
- b. This is average house price in Red Deer.
- c. This is the most common house price in Red Deer.
- d. None of the above.

2. What is the mode of following data set?

14, 5, 13, 5, 6, 14, 13, 15, 13, 6, 11, 7, 5, 6, 5

5 (appears 4 times)

3. A class of 27 students took a test.

- 9 students received 80%; $9/27 = 0.333$
- 5 students received 70%; and $5/27 = 0.185$
- 13 students received 55%. $13/27 = 0.481$

What is the mean score for the class?

$$(0.333 \times 80\%) + (0.185 \times 70\%) + (0.481 \times 55\%)$$

$$26.64\% + 12.95\% + 26.455\%$$

66%

or use another strategy

4. Determine the value of x so that the mean of the following numbers is 23:

28, 32, 27, 15, X

$$\frac{28 + 32 + 27 + 15 + X}{5} = 23$$

$$102 + X = 115$$

X = 13

or use trial and error

5. Complete the following questions given the list of numbers below:

8, 26, 32, 29, 27, 32, 36, 25, 30, 35

8, 25, 26, 27, 29, 30, 32, 32, 35, 36

a) Find the mean, the median, and the mode.

$$\text{mean} = \frac{8+26+32+29+27+32+36+25+30+35}{10} = 28$$

$$\text{median} = \frac{29+30}{2} = 29.5$$

$$\text{mode} = 32$$

b) If any outliers occur, identify them and list the trimmed data in order.

8 is an outlier. Also trim 36

25, 26, 27, 29, 30, 32, 32, 35

c) Determine the trimmed mean, median, and mode.

$$\text{trimmed mean} = 29.5$$

$$\text{trimmed median} = 29.5$$

$$\text{trimmed mode} = 32$$

d) How were each of the measures of central tendency affected by trimming the data and why?

median and mode did not change

mean is higher because we did not include the outlier, which was small

6. The following prices for the same model of camera are advertised at different stores:

\$1208.00, \$1279.00, \$1949.00, \$1312.00, \$1149.00, \$1294.00

1149, 1208, 1279, 1294, 1312, 1949

a) What is the mean cost of the camera?

$$\boxed{\$1365.17}$$

b) What is the median cost of the camera?

$$\frac{1279+1294}{2} = \boxed{\$1286.50}$$

c) Which of these would make a better measure of central tendency in this case? Explain your answer.

Median is a better measure of central tendency because it is closer to the middle of the prices. ^{Because there is an outlier}

$$10/20 = 0.5 \quad 6/20 = 0.3$$

$$3/20 = 0.15$$

7. In a class of 20 students, 10 got 80%, 3 got 85%, 6 got 90%, and the remaining student got 100%. What was the mean for the class?

$$(0.5 \times 80\%) + (0.15 \times 85\%) + (0.3 \times 90\%) + (0.05 \times 100\%)$$

$$40\% + 12.75\% + 27\% + 5\%$$

$$\boxed{85\%}$$

or use another strategy

8. Mrs. Gaby teaches two math 10 classes. One class has 20 students and has an average of 68%. The second class has 30 students and has an average of 62%. What is the weighted average of the two classes?

$$\text{total \# students} = 20 + 30 = 50$$

$$20/50 = 0.4$$

$$30/50 = 0.6$$

$$(0.4 \times 68\%) + (0.6 \times 62\%)$$

$$27.2\% + 37.2\%$$

$$\boxed{64.4\%}$$

9. Mike works as a server in a restaurant. In one night, he earned the following tips:

\$8.56, \$5.64, \$9.57, \$10.00, \$8.08, \$6.11, \$4.50, \$7.16, \$8.31, \$8.39

a) Calculate the mean and median tip per order.

$$\text{mean} = \$7.63$$

$$\text{median} = \frac{\$8.08 + \$8.31}{2} = \$8.20$$

b) At the end of the night, Mike served one more table. The customers leave a tip that raises Mike's mean tip per order to \$7.63. What was the amount of the final tip Mike received? *+*

$$\begin{array}{r} \times 11 \\ 7.63 = \frac{4.50 + 5.64 + 6.11 + 7.16 + 8.08 + 8.31 + 8.39 + 8.56 + 9.57 + 10 + X}{11} \\ \underline{-76.32} \quad \underline{-76.32} \\ 83.93 = 76.32 + X \\ 7.61 = X \end{array}$$

$$\boxed{\$7.61}$$

