

1. If all the measurements in a sample have the value B added to them and then are multiplied by a constant C then the resulting

B) standard deviation is multiplied by C only

2. What is the mean of these numbers: -4, 2, 17, 0, 13, -6, 5, -3?

B) 3

3. What is the median of these numbers -4, 2, 17, 0, 13, -6, 5, -3?

A) 1

4. If a distribution of midterm test scores has a long left hand tail, one might best infer that the test was

A) too easy, a high number of test takers did well

5. Roll two fair dice, the probability of getting 4's on both die is

A) $1/36$

6. What does "mutually exclusive" mean in the context of two chance events?

B) when one event occurs, the other cannot occur

7. The most important advantage of experiments over observational studies is that

B) experiments can give better evidence of causation.

8. In comparative trials in medicine, the placebo effect and subconscious bias on the part of the physicians evaluating treatment outcomes can be avoided by using

A) the double-blind technique.

9. You were presented with the following table and asked to draw a histogram with the data presented in it.

Identify the column that you would use for the horizontal axis:

COLUMN A

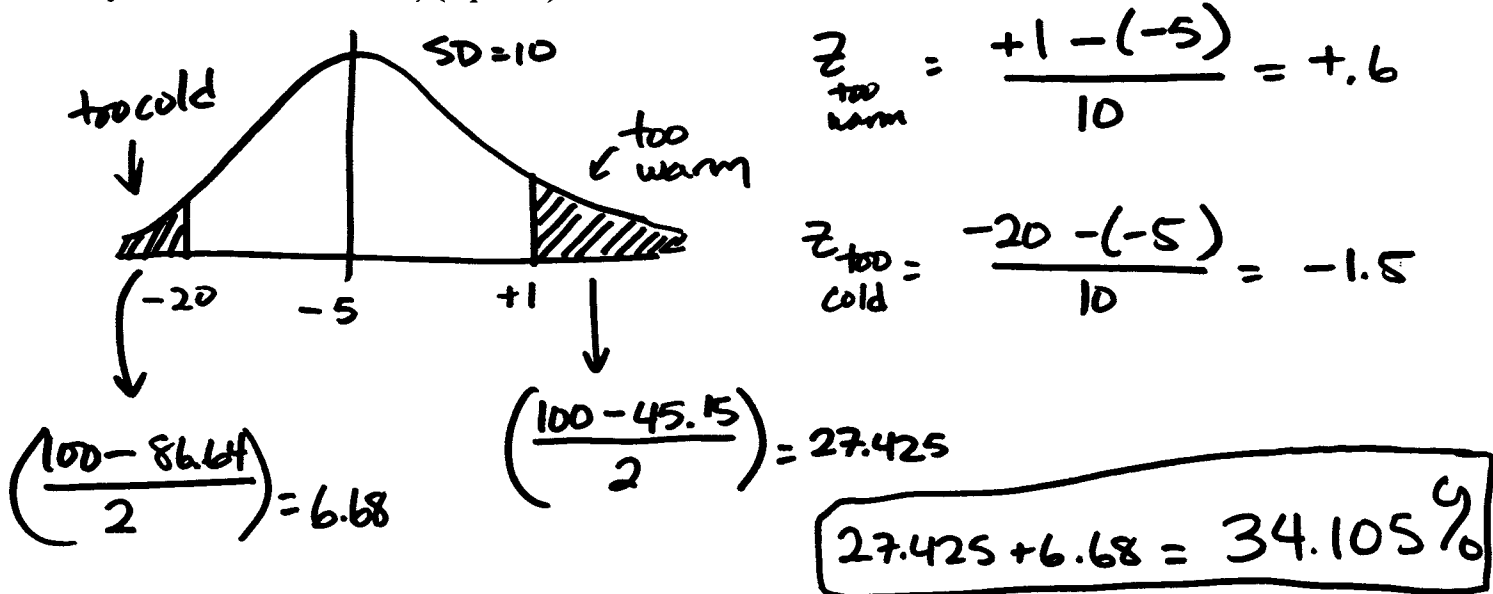
10. Using the information in Problem 9, identify the column that you would use for the vertical axis

(E) None of the above (None of the columns will work, you would need to modify column C by taking the width of the class interval into account.)

Problem Solving Section (15 points)

11. Ice Cream must be stored at temperatures between -20 and +1 degrees Celsius to remain usable. Suppose all the freezers belonging to a large grocery store chain (like Ralph's or Vons) produce a distribution of storage temperatures that is normal with a mean of -5 degrees Celsius and a standard deviation of 10 degrees Celsius. In other words, the average freezer owned by this grocery store chain keeps food at -5 degrees Celsius. Please answer the following questions about the ice cream being sold to customers.

A. What percentage of freezers are too warm or too cold to properly store ice cream? (show your work for full credit) (9 points)



B. What is the value of the inter-quartile range for this distribution of freezer temperatures? (show your work for full credit) (6 points)

