Integrated Algebra Practice: A.S.16
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NAME:_____

P.I. A.S.16: Recognize how linear transformations of one-variable data affect the data's mean, median, mode, and range

1. Which pair of numbers, when included with the set of data, will raise the value of BOTH the mean and median?
   6, 8, 10, 14, 18

   [A] 14, 15 [B] 1, 10

   [C] 8, 14 [D] 7, 15

2. Use a calculator to show how changing one or two numbers in the set of data below can affect the mean.
   145 167 198 200 250

3. Use the problem solving strategy *Guess and Test* to find one data item to add to the data set 9, 12, 12, 14 so that the new set has a mean, median, and mode of 12.

4. The Spanish test scores of the students in room 312 are listed.
   93 92 70 85 60 90 100 90 82 78 45 75 95 80 75 78 100 98 86
   Jay was absent and took a makeup test. What do we know about Jay's score on his makeup test, if the median score on the test was 83.5? Explain.

[1] A

[2] Answers may vary. Sample: If the number is changed to be greater than the original number, the mean will be larger. If the number is changed to be smaller than the original number, the mean will be smaller.

[3] 13

[4] Jay's score cannot be higher than 82. It must be 82 or lower. There are 20 scores, including Jay's score. If Jay's score is higher than 86, the median score would be 85.5. If his score is between 85 and 86, the median would be the average of his score and 85, and this would not equal 83.5. If his score is 85, then the median score is 85. If his score is between 82 and 85, the median score would be larger than 83.5.