

Due September 15, 2010, at the **beginning of section**

- *Please show all your steps. No credit will be given for just giving the answer, without any supporting work.*
  - *Grading: 3 points for a complete solution, 2 points for an almost correct solution, 1 point for some correct work, 0 otherwise*
1. A researcher is collecting the heights of a group of 100 seven year olds for a study. These range from 114 cm to 140 cm. By accident, the highest height is recorded as 1400 cm. For each part (a) and (b) given below, choose one of the options:
    - (a) The median of the recorded heights is
      - i. **Higher** than the median of the correct list of heights, but there is not enough information to say what it should be.
      - ii. **Higher** than the median of the correct list, it is off by \_\_\_\_\_.
      - iii. Unchanged; it is the same as the median of the correct list.
      - iv. **Lower** than the median of the correct list of heights, but there is not enough information to say what it should be.
      - v. **Lower** than the median of the correct list, it is off by \_\_\_\_\_.
    - (b) The average of the recorded heights is
      - i. **Higher** than the average of the correct list of heights, but there is not enough information to say what it should be.
      - ii. **Higher** than the average of the correct list, it is off by \_\_\_\_\_.
      - iii. Unchanged; it is the same as the average of the correct list.
      - iv. **Lower** than the average of the correct list of heights, but there is not enough information to say what it should be.
      - v. **Lower** than the average of the correct list, it is off by \_\_\_\_\_.
  2. Among first year students at a certain university, scores on the verbal SAT follow the normal curve; the average is around 520 and the SD is about 110.
    - (a) What percentage of these students have scores in the range 350-650?
    - (b) If a student scored 750, what is their percentile rank? (What percentile of the score distribution are they at?)
    - (c) Estimate the 85th percentile of this score distribution.
  3. A distribution of heights follows the normal curve. The 60th percentile is 69 inches and the 90th percentile is 72 inches. Find the 25th percentile of the heights.