Name:

Elementary Statistics **HW 6.3 part 2**

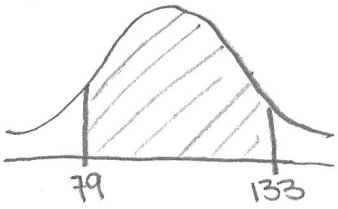
1. Pulse rates of women are normally distributed with a mean of 77.5 beats per minute and a standard deviation of 11.6 beats per minute.

   a. What are the values of the mean and standard deviation after converting all pulse rates of women to z scores using the formula: $z = \frac{x-\mu}{\sigma}$

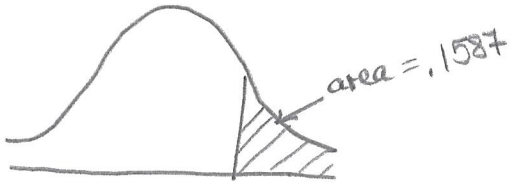
   b. The original pulse rates are measured with units of "beats per minute." What are the units of the corresponding z-scores?

For questions 2-4, the data depicts IQ scores of adults that are normally distributed with a mean of 100 and a standard deviation of 15 (as on the Wechsler test).

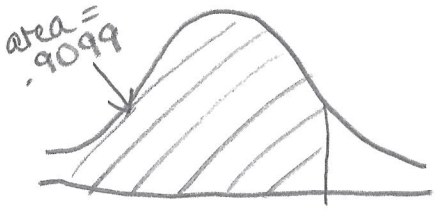
2. Find the z scores for IQ scores of 79 and 133, then find the area of the shaded region between those IQ scores.



3. Find the z-score based on the area shaded on the bell curve. Then find the corresponding IQ score to the nearest whole number.



4. Find the z-score based on the area shaded on the bell curve. Then find the corresponding IQ score to the nearest whole number.



Men's heights are normally distributed with a mean of 69.5 inches and a standard deviation of 2.4 inches. Women's heights are normally distributed with a mean of 63.8 inches and a standard deviation of 2.6 inches. Use this data to answer questions 5 a-d.

5. The U.S. Navy requires that fighter pilots have heights between 62 inches and 78 inches.
   a. Find the percentage of women meeting the height requirement. Are many women not qualified because they are too short or too tall?

   b. Find the percentage of men meeting the height requirement. Are many men not qualified because they are too short or too tall?

   c. If the Navy changes the height requirements so that all women are eligible except the shortest 2% and the tallest 2%, what are the new height requirements for women?

   d. If the Navy changes the height requirements so that all men are eligible except the shortest 1% and the tallest 1%, what are the new height requirements for men?