

Pledge:

2/6/2006
Dr. Lunsford

MATH171 – Statistical Decision Making
Quiz 3

Name: _____
20 Points Total

Please show all calculator input on this quiz and clearly indicate your answers.

Some IQ tests are rescaled so that the IQ scores follow a normal distribution with a mean of 100 points and a standard deviation of 16 points. Please use this information to answer the following questions:

(a) Draw a graph of the density function that represents IQ scores using this normal model. Please be sure to label your horizontal axis and to clearly mark the data values that are $\pm 1\sigma$, $\pm 2\sigma$, and $\pm 3\sigma$ from the mean. (4 points)

(b) According to this model, what percent of people would you expect to have an IQ score over 80? Clearly represent this percent on your graph in part (a) above. Please give your answer using a complete English sentence. (4 points)

(c) What IQ score corresponds to a standardized score (i.e. z-score) of 1.25? (3 points)

(d) What is the standardized score for an IQ score of 70? (3 points)

(e) What range of IQ scores are the middle 80% of scores? Please give your answer using a complete English sentence. (4 points)

(f) To be a member of Mensa, one must have an IQ that is in the top 2% of the population. Using this model, what is the smallest IQ score one could have in order to qualify for membership in Mensa? (2 points)