**Psy 230 Lab 4: Z-scores and Probability**

1a. What two things does a z-score tell us about the relative standing of a particular raw score?

1b. ***Use SPSS to transform the following raw scores to z-scores: 69, 54, 84, 48, 63, 45***--Display the raw scores with their corresponding z-scores.   
  
--Explain how you obtained the z-scores within SPSS.

2. For a particular group of scores, M = 20 and SD = 5. Give the corresponding z-score for a) x = 30, b) x = 15, c) x = 20, and d) x = 22.5. *Please show your work.*

3. Write the formula for changing a z-score to a raw score, and define each of the symbols.

4. For a particular group of scores, M = 10 and SD = 2. Give the raw score for   
a) z = +2.0, b) z = +.5, c) z = 0, and d) z = -3.0. *Please show your work.*

5. The grade point averages at La Siesta University are normally distributed with μ=2.5 and σ=.75.

a. What percentage of students have a GPA between 2.35 and 2.5?

b. What percentage of students have a GPA of 3.5 or above?

c. The top 3% of students are to be given special recognition. What grade point average (or above) does a student need in order to receive special recognition?

6. In an ESP experiment, participants must predict whether a number randomly generated by a computer will be odd or even. (5 pts.) **Please show your work.**



a. What is the probability that a participant would guess *21 or more* correct in a series of 36 trials?

b. What is the probability that a participant would guess *exactly* 17 correct in a series of 36 trials?