

**Psychology 225-004**  
**Standard scores and Probability Practice Problems**

1. An Interpersonal Reactivity Scale (IRS) was given to a population of juvenile sex offenders to measure their levels of empathy for victims. Assume that the IRS scores are normal with a mean of 7.66 and a standard deviation of 1.75

What is the probability of someone scoring a 9.02 or higher on the IRS?

50% of the offenders would score between \_\_\_\_\_ and \_\_\_\_\_.

95% of the offenders would score between \_\_\_\_\_ and \_\_\_\_\_.

2. In a population distribution with a mean of 1200 and a standard deviation of 150, what percentile corresponds to a score of 1425? What score would someone have to get to score in the 45<sup>th</sup> percentile?

3. Applicants for a correctional facility are required to take a Doll-Chang Emotional IQ exam and only the top 20% will be accepted.

(a) If  $\mu = 70$  and  $\sigma = 11$ , what score must an applicant get in order to be accepted?

(b) If they decided to accept the top 40%, what score must an applicant get to be accepted?

(c) If 80 applicants apply and they accept the top 40%, how many applicants are likely to be accepted?

4. In a population with a mean of 500 and a standard deviation of 100, calculate the probability of someone scoring between:

a. 500 and 600

b. 600 and 650

c. 400 and 650