PSYC 2317: Statistical Methods for Psychology

Tarleton State University — Exam 1 Practice Problems

1. Compute the mean and median for the following set of scores: 5,7,5,4,3,12,9,6,6,5,7,5,6,4
2. A sample of $N = 6$ scores has a mean of $\overline{X} = 8$. If one score with a value of $X = 3$ is removed from the sample, what is the mean of the remaining set of scores?
3. Compute the variance and standard deviation for the following scores: 1,8,0,4,2
4. For a distribution with $\mu = 70$ and $\sigma = 20$, find the z-score that corresponds to each of the following X values: 80, 100, 65, 40.
5. For a distribution with $\mu = 60$ and $\sigma = 6$, find the X-value that corresponds to each of the following z-scores: 1.50, -0.50, 2.00, -1/3
6. On a psychology exam with $\mu = 76$ and $\sigma = 12$, Tom scored 8 points below the mean, Mary had a score of 73, and Bill had a z-score of -0.50. Rank these students in order from lowest to highest score.
7. A distribution of scores with $\mu_1 = 73$ and $\sigma_1 = 6$ is standardized to create a new distribution with $\mu_2 = 50$ and $\sigma_2 = 10$. What is the new value for each of the following scores from the original distribution: 67, 70, 79, 82
8. The length of conversations between supervisors and workers in a particular manufacturing industry is normally distributed with a mean of 4.0 minutes and a standard deviation of 0.8 minutes. What percentage of conversations are:
   (a) longer than 4.4 minutes?
   (b) Longer than 3 minutes?
   (c) Shorter than 2.5 minutes?
9. Scores on the SAT form a normal distribution with a mean of $\mu = 500$ with $\sigma = 100$. A certain university only accepts students who score at or above the 60th percentile on the SAT. If someone scores a 600 on the SAT, do they meet the minimum for admission? Explain.
10. Suppose we are taking samples from a normal population with $\mu = 40$ and $\sigma = 8$:
    (a) What is the probability of obtaining a sample mean less than 37 for a sample of size 16?
    (b) What is the probability of obtaining a sample mean greater than 37 for a sample of size 16?
    (c) What is the probability of obtaining a sample mean less than 37 for a sample of size 4?