PSYC 2317: Statistical Methods for Psychology

Tarleton State University | Exam 1 Practice Problems | Spring 2020

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 $\overline{X} = 76$ 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 $\sigma = 100$. If a certain university only accepts students who score at or above the 60th percentile on the SAT, what is the minimum score needed to be accepted?
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?