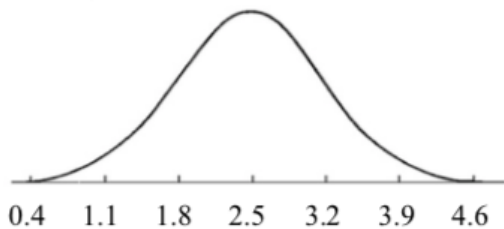# H.W. Normal Distribution-Empirical Rule-Z-Score

1. The household income in a certain community is normally distributed with a mean of $58,000 and a standard deviation of $10,000. Determine the proportion of households with incomes exceeding $70,000.

2. Scores on a test are normally distributed with mean 78 and standard deviation 6. How high must you score to be in the top 5% of all scores?

3. The time it takes Ralph to commute to work has a normal distribution, with a mean of 23 minutes and a standard deviation of 2.5 minutes. On 95% of occasions the commute time takes less than what amount?

4. An applicant's score on a company's employment exam was 215. The average score for the exam is 189. If the z-score for this applicant was 2.5, what was the standard deviation for the employment exams? Assume the exam scores for the company to be normal.
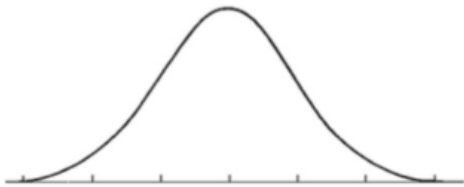
5.

Identify the standard deviation and the mean from the given normal distribution.

0.4   1.1   1.8   2.5   3.2   3.9   4.6

6.

In a normal distribution of test scores, the middle 68% of test takers scored between 66 and 78. What is the mean? What is the standard deviation?

7.

. Find the value L for which the area under the normal distribution $N(14, 4)$ to the left of L is 0.1788, as pictured below.

0.1788

L   14