



Problem 1 – Characteristics of the Chi-Square Distribution

1.3/1.4: How does the chi-square distribution with 5 degrees of freedom differ from the standard normal distribution?

1.5 Change the degrees of freedom to 10, 25, and 50. What happens to the shape of the distribution?

Problem 2 – Critical Values for a Chi-Square Distribution

2.2: Use the **Integral** tool to determine the area between the critical values, 3.24697 and 20.4832.

2.3/2.4: Use the inverse chi-square command (invchi2) to find the critical values for the following. Remember that degrees of freedom = $n - 1$.

	χ^2_L	χ^2_R
80%, $n = 12$		
90%, $n = 23$		
98%, $n = 12$		
99%, $n = 23$		

Problem 3 – Constructing a Confidence Interval

The weights of 15 randomly selected samples are listed on page 3.4. Construct a 95% confidence interval to determine if the differences in the weights are acceptable.

3.4: sample standard deviation: _____

3.5: critical values: _____ confidence interval: _____

Are the differences in weights acceptable? Explain.

Problem 4 – Practice

4.1/4.2: Construct a 99% confidence interval for the standard deviation of time spent on homework by all the students at the school.

4.3/4.4: Construct an 80% and 90% confidence interval for the standard deviation of all the test scores.