

**Chapter 4 Homework**

**Name:** \_\_\_\_\_

Using the grouped frequency distribution from the Chapter 3 homework answer the following questions:

1. Say that you are interested in the percentile rank for a score of 30.

1a. What is the cumulative frequency of the group below the group with  $X = 30$ ?  $n_L =$

1b. What is the frequency of the group containing  $X = 30$ ?  $n_W =$

1c. Using the interpolation formula, estimate the percentile rank for a score of 30. (Show the relevant work and be sure to carry out all computations to three decimal places.)

2. Say that you want to estimate what score is at the 75<sup>th</sup> percentile.

2a. What is the lower real limit of the group that contains the 75<sup>th</sup> percentile?  $L =$

2b. What is the cumulative frequency up to of the group containing the 75<sup>th</sup> percentile?  $n_L =$

2c. What is the width ( $i$ ) of the group containing the 75<sup>th</sup> percentile?  $i =$

2d. What is frequency of the group with the 75<sup>th</sup> percentile?  $n_W =$

2e. Using the interpolation formula, estimate the score at the 75<sup>th</sup> percentile. (Show the relevant work and be sure to carry out all computations to three decimal places.)

3. Say that you want to estimate what score is at the 50<sup>th</sup> percentile.

3a. What is the lower real limit of the group that contains the 50<sup>th</sup> percentile?  $L =$

3b. What is the cumulative frequency up to of the group containing the 50<sup>th</sup> percentile?  $n_L =$

3c. What is the width ( $i$ ) of the group containing the 50<sup>th</sup> percentile?  $i =$

3d. What is frequency of the group with the 50<sup>th</sup> percentile?  $n_W =$

3e. Using the interpolation formula, estimate the score at the 50<sup>th</sup> percentile. (Show the relevant work and be sure to carry out all computations to three decimal places.)