



Problem 1 – Finding the Percentile Given the Score

Find the mean and standard deviation of the scores on page 1.3. Create a histogram on page 1.4 and describe the distribution.

Sketch your graph below.

Page 1.5: Without calculating, at what percentile is a score, if it is... (note that hovering over a bin will display the number of scores in that bin)

- the mean?
- one standard deviation above the mean?
- one standard deviation below the mean?

Work through the problems on page 1.6.

Use the **NormCdf** command on page 1.7 to find the percentile for the scores in the table.

	33	50	26	12
Guesses				
Actual				

Page 1.8:

At what percentile is a student who scored a 610 on a test with $\bar{x} = 500$ and $\sigma = 28$?

Page 1.9:

At what percentile is a student who scored a 17 on a test with $\bar{x} = 20$ and $\sigma = 2.5$?

Problem 2 – Finding the Score Given the Percentile

The scores on a test are normally distributed with a mean of 120 and a standard deviation of 12, or $N(120, 12)$. To reverse the process and find a score given its percentile, use the **Inverse Normal** command from the Distributions menu. This command has the format:

invNorm (percentile, mean, standard dev)

The area in the pop up box refers to the area to the left of the given score, marked by the percentile.

Answer the question on page 2-1. Then use the **invNorm** command to find the scores on page 2.2–2.3.

	60th	30th	70th	90th
Guesses				
Actual				

Problem 3 – Practice

3.1: Helen took a test where $N(380, 42)$ and scored 465. Juan took a test where $N(65, 10)$ and scored 88. Who is at the higher percentile?

3.2: Ty scored lower than 14% of the rest of the students on a test with $N(200, 35)$. Estimate Ty's score.

3.3: What score must Shuang get to be in the top 5% of students taking a test with $N(325, 35)$?