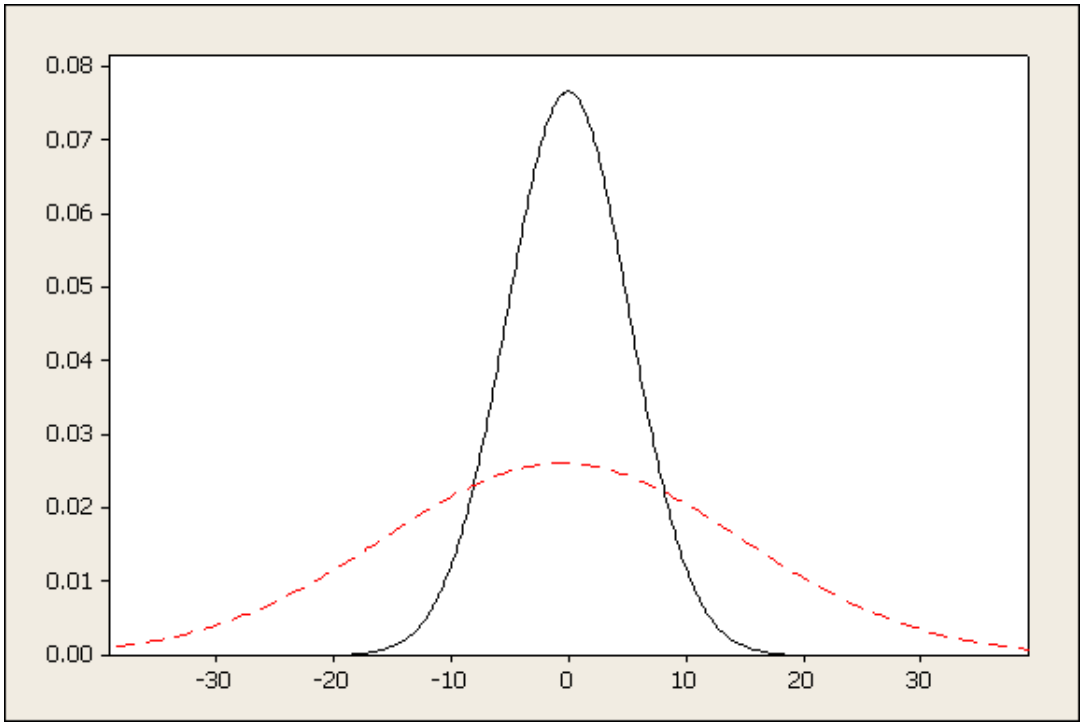

Two normal distributions

MAT 125 Elementary Statistics I

Homework 9

1. Two normal distributions are shown in the figure.
(a) What is the mean of the solid-lined curve and what is the mean of the dashed-line curve? What are the amplitudes (peak values) of these curves?
(b) Which curve has the larger dispersion?
(c) Using your values for the amplitudes, estimate the ratios of the dispersions of the two curves.

2. State whether you think the distribution would be normal, J-shaped, bimodal, skewed left or skewed right in the following. Explain your answers.
(a) The life expectancy of a sample of microwave ovens
(b) The numbers resulting from tossing a die many times
(c) The salaries of teachers at a school where there are a lot of new hires
(d) The heights of a class of college freshmen containing equal numbers of men and women.

3. In a distribution skewed to the left, which has the greatest value: the mean, median or mode? Explain your reasoning.

4. List three data sets that are not normally distributed (use examples other than those elsewhere in this homework). State the shape of each of your example distributions.

5. Use Table 1, class 9, or Table Z in the book to determine the percentage of the data between:
(a) z = -0.15 and z = -0.82
(b) less than z = -1.90

6. Assume that the number of hours that children spend per year is normally distributed with a mean of 1600 hours and a standard deviation of 100 hours.
(a) What percentage of children watch TV for more than 1750 hours per year?
(b) What percentage of children watch TV less than 1400 hours per year?