**Problem Set #1. MVIS 5301 Statistical Applications for Visualization**

1. What is the level of measurement for each of these variables (from the 2002 [General Social Survey](http://www3.norc.org/gss+website/)) (nominal, ordinal, interval/ratio)? *Briefly* justify your answer.   
   ***Note:*** Ignore the response categories of *NAP, DK, and NA* for purposes of this question.

CHILDS – How many children have you ever had?

0-6. Actual Number;

7. Seven or more;

9. *DK or NA*

EDUC – Highest year of school completed

0-20. Actual number of years;

9. *DK or NA*

1. A student discovers that his grade on a recent test was in the 72nd percentile. If 90 students took the test, then approximately how many students received a higher grade than he did?
2. A sample of 7 underweight babies was fed a special diet and the following weight gains (lbs) were observed at the end of three months.

6.7 2.7 2.5 3.6 3.4 4.1 4.8

Find the mean and standard deviation for these 7 babies. *Show your calculations* (credit will not be given if you simply provide the answers).

1. The Nielsen Company publishes information on the TV-viewing habits of Americans in *Nielsen Report on Television.* A sample of 20 people yielded the weekly viewing times, in hours, in the table below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 25 | 41 | 27 | 32 | 43 |
| 66 | 35 | 31 | 15 | 5 |
| 34 | 26 | 32 | 38 | 16 |
| 30 | 38 | 30 | 20 | 21 |

1. Determine the median of these data.
2. Determine the quartiles of these data.
3. Obtain the lower and upper limits.
4. Determine potential outliers, if any.
5. Use the *Area under the standard normal curve* table to obtain the shaded area under the standard normal curves below.

