You must show your work to receive full credit.

Use the information in the following setting to answer questions 1 through 5.
Note that there may be more than one right answer. In these cases, choose all that apply.

Table 1: Graphics choices to answer questions 1 through 5

<table>
<thead>
<tr>
<th>Pie Chart</th>
<th>Bar Chart</th>
<th>Multiple Bar Chart</th>
<th>Pareto Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boxplot</td>
<td>Multiple Boxplot</td>
<td>Time Series Plot</td>
<td>Multiple Time series Plot</td>
</tr>
<tr>
<td>Histogram</td>
<td>Multiple Histogram</td>
<td>Dotplot</td>
<td>Multiple Pie Chart</td>
</tr>
</tbody>
</table>

1) Hospital administrators need to illustrate the distribution - from highest frequency to lowest frequency - for “causes of death” for all patients that died in the hospital’s care during the past year. There are 25 classifications. From the choices above, the graphics tool(s) to use would be: (3 pts)

2) If the administrators wanted to investigate the distribution of “causes of death” split by gender the graphic tool(s) to use would be: (3 pts)

3) Say that the hospital described in 1 is a 2500 bed facility, if the administrators wanted to look at the proportion of occupied beds every day from 1/1/05 to 12/31/05. The graphics tool(s) to use would be: (3 pts)

4) As part of the annual report the administrators need to illustrate the distribution of patients’ ages. From the choices above, the best graphic tool(s) to use would be: (3 pts)

5) In order to compare the distribution of patient ages split by race the administrators might use: (3 pts)
6) From your “real life” experiences for parts A through C provide two examples of variables at the indicated level. Note that variables described elsewhere on this document will not count for credit: (1.5 pts each)

A) A nominal level variable: ________________________________

B) A quantitative discrete variable: ________________________________

C) A quantitative continuous variable: ________________________________

7) In order to investigate whether or not bovine spongiform encephalopathy (BSE, mad cow disease) might have a hereditary link, Wilesmith et al. studied the offspring of two cohorts of cows. One group had BSE and the other cohort was negative for the disease. The offspring of these two cohorts were followed for 6 years or until they tested positive for BSE. The type of study described in this setting is: Circle only 1 choice and, in 1 or 2 sentences, defend your answer (6 pts)


A) Cross Sectional Study  B) Prospective Study  C) Retrospective Study  D) Controlled Study

Use the information in the following setting to answer questions 8 and 9

The student government at a large university is concerned about the amount that students spend on materials for a 15 credit hour semester of study. A student body representative selects a SRS of 8 students with a 15 credit hour course load and asks them how much they had spent on materials for that semester. These data are reported in Table 2.

| Table 2: Costs of course materials for 8 randomly selected students (dollars) |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 282                             | 285             | 341             | 375             | 275             | 320             | 415             | 279             |

8) The mean expense incurred for course materials is: (5 pts)

9) Consider that the hospital described in problems 1 - 5 had 6,120 patient deaths in 2005. Of these 730 (11.9%) were from heart related causes. This value is an example of a(n): Circle only 1 choice and, in 1 or 2 sentences, defend your answer (5 pts)

A) Point Estimator  B) Parameter  C) Observation