Circle your answer for questions 1-3.

Use the information in this graph to answer questions 1 and 2.

Ages of 58 people attending a water-quality lecture.
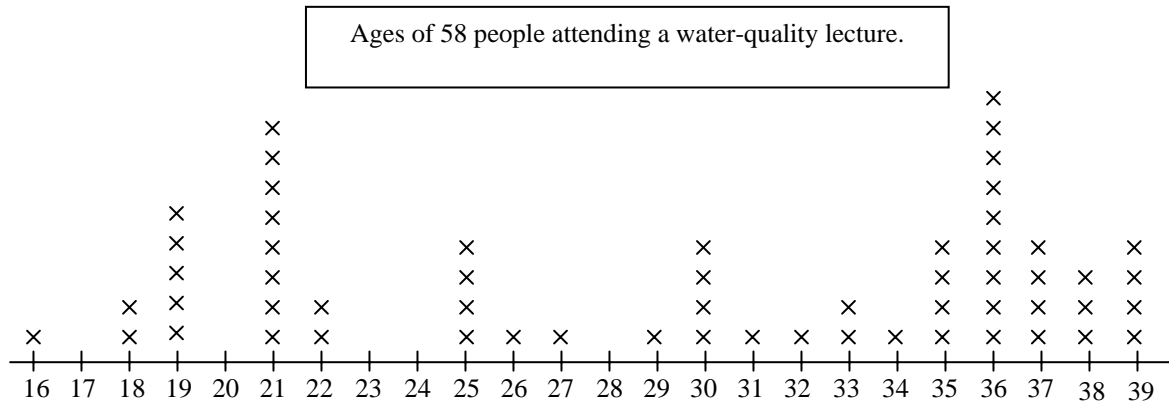
(7 pts)1. What is the median of this set of data?

    A. 29

    B. 30.5

    C. 31

    D. 30

    E. 31.5

(7 pts)2. What is the IQR for this set of data?

    A. 17

    B. 18

    C. 36

    D. 21

    E. 15

(7 pts)3. An exam was given to fifth-grade students, and the scores were normally distributed with mean 62 and standard deviation 12. What percent of students had scores between 50 and 98?

    A. 83.85%

    B. 68%

    C. 95%

    D. 81.50%

    E. None of the above

(8 pts)4. What type of data, categorical or measurement, is the response to each situation?

   a) number of credit hours taken this semester

   b) favorite music style

   c) number for your birth month

   Give an example of measurement data for the context of a shopping trip.

(8 pts)5. The pie graph shown here shows how letter grades were distributed on an exam.

Distribution of Grades on Exam
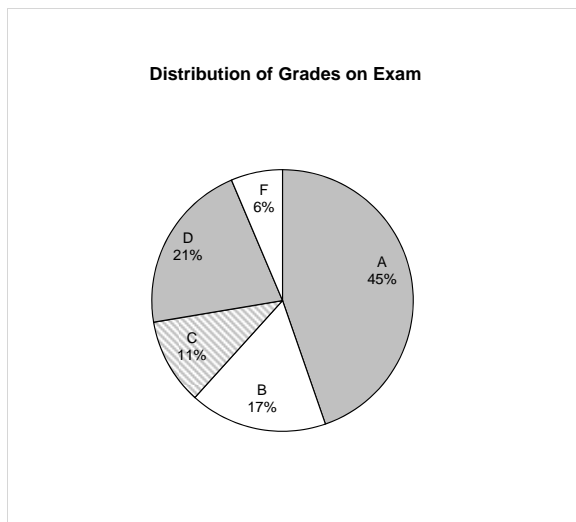
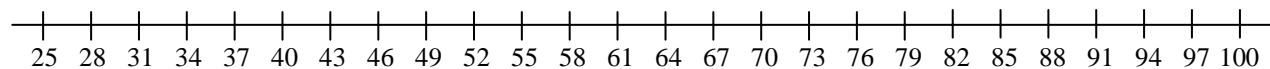   a) What should be the central angle for the D grade category? Show your work. Do not round.

   b) 15 students had a grade of F. How many students took the exam?
      Show your work.

(5 pts)6. Construct an ordered stem-and-leaf plot for the data shown here.

78, 92, 80, 77, 71, 99, 101, 76, 82, 99, 102, 114, 86, 71, 104, 89, 101, 112, 76

(10 pts)7. Use the scale provided to construct a box-and-whisker plot for the following 25 exam scores.

27, 68, 70, 72, 74, 75, 77, 78, 78, 80, 81, 82, 83, 83, 85, 86, 87, 87, 88, 89, 90, 90, 92, 93, 96

```
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--
 25 28 31 34 37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
```

median =

$Q_1 =$ $Q_3 =$ IQR =

Determine whether there are any outliers. Show all steps of your work.

(8 pts)8. The mean weight of the 15 girls in Ms. Steadman's fourth-grade classroom is 59 pounds. The
      mean weight of the 14 boys in the class is 68 pounds. What is the mean weight of all children in
      the class? Show and label all steps of your work. Round to the nearest tenth.

(9 pts)9. Find the standard deviation of the following data. The mean is 22. Show your calculations.
      Round your final answer to the nearest tenth.

                        12, 12, 15, 21, 21, 24, 29, 30, 34

(8 pts)10. Pleasantville School District gets federal funds for special programs for all elementary school
      students who score more than two standard deviations above or below the mean on a standardized
      achievement test the district administers each year. Scores are normally distributed with a mean
      of 100 and standard deviation of 15. If 898 students take the test, how many would you expect to
   qualify for federal funds?   Show your work. Round to the nearest whole number

      What scores would qualify for federal funds?

(8 pts)11. On her math test (mean 76, standard deviation 7) Jodie got 73. On her science test (mean 150, standard deviation 15) her z-score was –0.667.

      a) On which test did she do best compared with everyone else? Show your work.

<p style="text-align:right;">┌─────────────┐
│   │
└─────────────┘</p>

      b) What was her actual score on the science test? Round to the nearest whole number. Show your work.

<p style="text-align:right;">┌─────────────┐
│   │
└─────────────┘</p>

(9 pts)12. Use these box plots to answer the questions below.

Test 1

Test 2

40   50   60   70   80   90   100
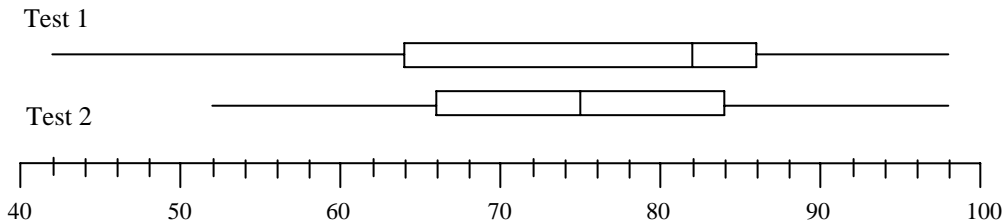
a) What is the median score for Test 1?

b) For Test 2, the lowest 25% of scores are between _____ and _____.

c) For which test will there be a higher standard deviation?

d) How do the box plots indicate that students scored better on Test 1?

(6 pts)13. Of 175 cars at Quality Motors, 67 have GPS devices and 120 have side airbags. If 55 cars have both, what is the probability of selecting a car at random that has either a GPS *or* side airbags? Show your work. Express your answer as a percent. Round to the nearest whole percent.