Chapter 12 Scanned Homework #2

Contemporary Math

All work and any formulas used must be shown for problems involving a process.

The following are the numbers of dinner customers served by a restaurant on 40 consecutive days. The numbers have been ranked least to greatest.

46	51	52	55	56	56	58	59	59	59
60	61	62	62	63	63	64	64	64	65
66	66	66	67	67	67	68	68	69	69
70	70	71	71	72	75	79	79	83	88

1. (4 points each for each calculation)

a. Median:

b. Quartile 1:

c. Quartile 3:

d. 15^{th} percentile:

e. 85^{th} percentile:

f. Which value is in the 88^{th} percentile?

2. Find the percentage of area under the normal curve between the mean and the given values of *z.*

(4 points each) *A sketch MUST be drawn to illustrate the solution. Click here to print the z-table.

a. Between $z = 1.31$ and $z = 1.73$

b. Between $z = -3.02$ and $z = 2.03$

3. A large company employees workers whose IQs are normally distributed with mean 105 and a standard deviation of 12.5. Management uses this information to assign employees to projects that will be challenging, but not too challenging. What percentage of employees would have IQs that satisfy the given criteria?

(6 points each) *A sketch MUST be drawn to illustrate the solution. Click here to print the z-table.

a. *less than 90*

b. *between 100 and 120*

4. Use the **empirical rule** to solve. Draw a figure for each part. (4 points each)

The mean body weight for women between 18 and 25 years old is 134 lbs and the standard deviation is 26 lbs.

a. What percent of women in this age group will weigh between 108 and 160 lbs?

b. What percent of women in this age range will weigh between 82 and 186 lbs?

c. What percent of women in this age range will weigh between 56 and 212 lbs?

d. What percent of women in this age range will weigh less than 108 lbs?

e. In a college dormitory of 450 females ages 18-25 years old, how many would you expect to weigh between 82 and 186 lbs?