Elementary Statistics	**Name:** _____
Extra Credit 1	**Class:** _____
Due Date: _____	**Score:** _____

Your work must be very similar to my notes, lectures, or videos.

Be Neat, Organized, and No Work ⇔ No Points

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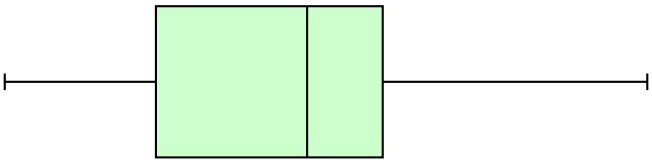
1. **The score of 500 randomly selected exams had the five–point summary of 52, 60, 70, 74, and 100.**

   (a) **(2 points) Clearly label the box plot below.**



   (b) **(2 points) Find its IQR.**

   (b) _____

   (c) **(2 points) How many of the scores were above 60?**

   (c) _____

   (d) **(3 points) Find the upper and the lower fence.**

   (d) _____

   (e) **(2 points) Find the range of values that contain any score which are classified as outlier.**

   (e) _____

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2. A sample of 120 nurses had a mean age of 40 years with standard deviation of 8 years.

(a) (2 points) Using the empirical rule, find its 68% range.

(a) _____

(b) (2 points) Using the empirical rule, find its 95% range.

(b) _____

(c) (2 points) Using the empirical rule, find its 99.7% range.

(c) _____

(d) (2 points) How many of these nurses have unusual age, according to empirical rule?

(d) _____

(e) (2 points) Find the Z–score for a nurse who is 54 years old.

(e) _____

(f) (2 points) Find the Z–score for a nurse who is 22 years old.

(f) _____

(g) (2 points) Find the age of a nurse with Z–score of 2.125.

(g) _____

3. Fifty workers were randomly surveyed about how long in minutes it takes them to travel to work each day. The data below are given in minutes:

20	**35**	**42**	**52**	**65**	**10**	**60**	**49**	**24**	**37**	**23**	**24**	**35**	**59**	**62**	**70**	**75**
41	**25**	**28**	**27**	**50**	**47**	**56**	**30**	**32**	**48**	**40**	**45**	**39**	**55**	**50**	**80**	**55**
30	**28**	**45**	**28**	**56**	**60**	**62**	**23**	**38**	**39**	**55**	**60**	**39**	**49**	**60**	**100**	

(a) (2 points) Find the sample mean and sample standard deviation for this survey. Round your answer to the nearest minute.

(a) _____

(b) (2 points) Find the usual range for the number of minutes of traveling time to work.

(b) _____

(c) (2 points) Construct the stem plot.

Stem(tens)	**Leaf(units)**

(d) (2 points) Find P_{10} for the time of getting to work for these workers.

(d) _____

(e) (2 points) Find P_{65} for the time of getting to work for these workers.

(e) _____

(f) (2 points) Find the percentile ranking for a worker that takes 50 minutes to travel to get to work. Round your answer to the nearest whole percentage

(f) _____

4. The midterm exam score and the overall grade for a random sample of 10 students in an elementary statistics course are shown in the following table.

Midterm Grade Score	50	90	70	80	60	90	90	80	70	70
Overall Grade	65	80	75	75	45	95	85	80	65	70

(a) (2 points) Find the value of the correlation coefficient r.

(a) _____

(b) (2 points) Find the value of the coefficient of determination r^2 to the nearest percentage.

(b) _____

(c) (2 points) Find the equation of the regression line.

(c) _____

(d) (3 points) Assuming linear correlation is significant, predict the y value for midterm score 85.

(d) _____

(e) (2 points) Assuming linear correlation is not significant, predict the y value for midterm score 85.

(e) _____

(f) (2 points) Plot each point and draw the regression line below.