Table Number:_____ Group Name: _____

Group Members:_____ _____ _____

Text Messaging is Time Consuming! What Gives?

Introduction

Many of us send lots of text messages throughout a day. What factors could be related to the number of text messages one sends in a day? In this activity, we will explore the relationship between the number of text messages one sends in a day and a few other potential explanatory factors.

With your group, choose one of the following questions to explore:

A. Does the number of hours you spend hanging out with friends in a day increase or decrease with the number of text messages you send?
B. Does the number of hours you spend doing homework in a day increase or decrease with the number of text messages you send?
C. Does the number of text messages you receive in a day increase or decrease with the number of text messages you send?

To answer the question you choose, you are going to download and work with a real data set. To download the data set, go to the following website: http://www.amstat.org/censusatschool/

With your group, please carry out the following steps:

a) Click on Random Sampler
b) Accept the Terms & Conditions
c) Select a sample size of 100 from All States and 9, 10, 11, and 12 grade levels. Include All Genders and All Years of data collection.
d) Download the data into Excel.
e) Open the data in Excel. You will see a large number of variables (labeled in each column).
f) Delete all the columns except for the following:

   Gender, Text Messages Sent Yesterday, Text Messages Received Yesterday, Hanging out with Friends Hours, Doing Homework Hours
g) Now open StatCrunch and copy and paste these remaining columns into StatCrunch

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1. Determine which of your variables is the **dependent (or response or predicted) variable** (y) and which is the **independent (or explanatory or predictor) variable** (x) and write them below.

   Dependent (or response or predicted) variable: _____

   Independent (explanatory or predictor) variable: _____

2. Create a scatterplot with StatCrunch and copy and paste it below then answer the given questions.

i. Does the relationship appear to be linear? Explain.

ii. Are there any outliers? If so, list them here:_____

iii. What are some possible explanations for why there could be outliers?

3. Use StatCrunch to estimate the least squares regression line for your downloaded data and write your equation here:

i. What is the slope of your equation?_____ Interpret this slope in the context of the problem

ii. What is the y-intercept of your equation? _____ Interpret this y-intercept in the context of the problem.

iii. What is the correlation coefficient? _____ Interpret this in the context of the problem.

iv. What percentage of the variation in your response variable is explained by the explanatory variable? Explain.

Now choose a DIFFERENT question A – C to answer and repeat steps 1 – 3.

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   Dependent (or response or predicted) variable: _____

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   i. What is the slope of your equation?_____ Interpret this slope in the context of the problem.

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   iii. What is the correlation coefficient? _____ Interpret this in the context of the problem.

   iv. What percentage of the variation in your response variable is explained by the explanatory variable? Explain.

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