First name: _____ Last name: _____

Statistics Homework

1. **Find the mean, median, mode, and range of each set of data.**

1. 170, 69, 51, 141, 157, 165, 124, 123, 56, 89, and 21
2. 107, 25, 24, 55, 162, 15, 79, 53, 52, 105, 15, 172, and 124
3. 153, 94, 120, 94, 48, 104, 24, 159, 149, 177, 109, 104, and 160

2. **Identify each data source as primary or secondary.**

a) A researcher interviewed 100 students about their study habits.

b) A sporting goods company searched on the Internet for data on how Canadians spend their leisure time.

c) A manufacturer surveyed 1000 recent customers about possible changes to a product.

d) A student found advertisements in out-of-town newspapers at a library to check admission prices at theatres across the country.

3. **Identify the population in each situation.**

a) Generally, girls learn to walk before boys do.

b) The mean mark on yesterday's test was 72%.

c) As cars age their repair costs increase

d) Most food stores charge more for cream than for milk.

4. Identify the type of sample in each situation.

a) The personnel department sends questionnaires to 75 employees randomly selected from a list of everyone working for the company.

b) A computer randomly chooses one name from an alphabetical list of a store's customers and then also selects every 25th person listed before and after that name.

c) The president of a restaurant chain interviews employees at one branch.

d) The student council of a school randomly selects a number of students from each class. This number is proportional to the size of the class.

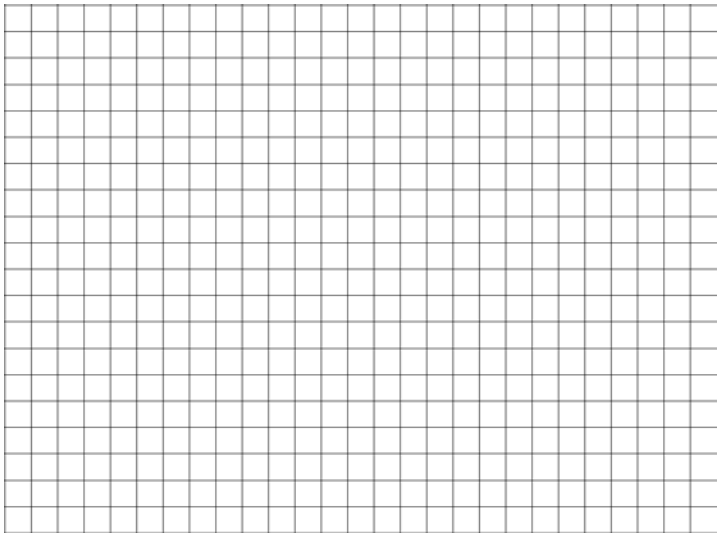
Word problems

1. The chart shows the number of times a student was late for math class in a month, and the student's mark in the class.

Number of Late Arrivals	12	4	0	10	15	18	8	1	3	8	0	7	10	2	11
Mark (%)	65	75	78	45	58	54	68	85	90	63	82	72	62	76	71

a) Which is the independent variable and the dependent variable? Why?

b) Make a scatter plot of the data.



c) Use the scatter plot to describe the relationship between lateness and marks.

2. The table below shows how many sit-ups Samantha did in gym class.

a. Plot the data on the grid.

Time (min)	Sit-Ups Completed
0.5	17
1	33
1.5	48
2	62
2.5	72
3	80
3.5	86
4	91

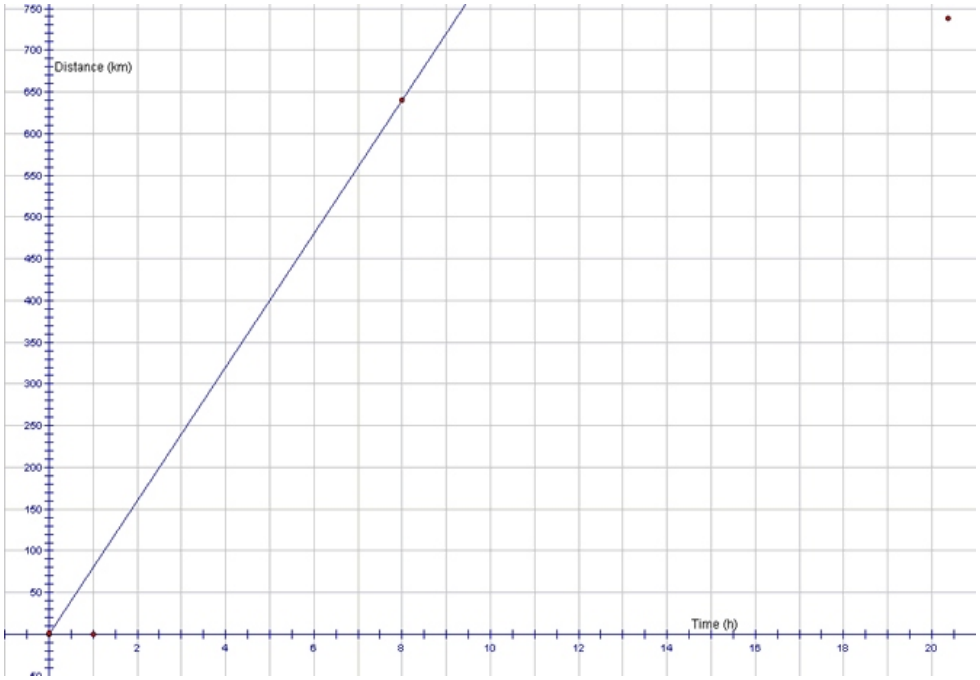
b. Describe the pattern of the plot.

c. Is the trend increasing or decreasing? Is the rate of change (speed) getting faster or slower?

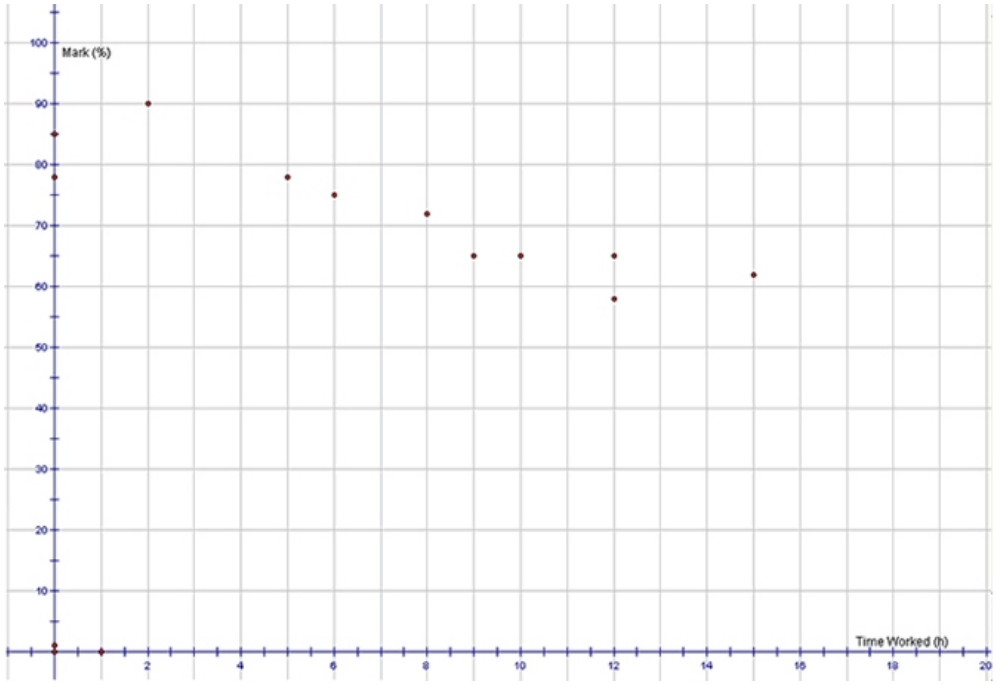
3. For each scatter plot, answer the following questions.

a) Identify the independent and dependent variables.
b) Select two points on each line of best fit, and describe what each point represents.
c) Use the scatter plot to describe the relationship (if any) of the variables, including the strength of the correlation.
d) Find the equation of line of best fit.

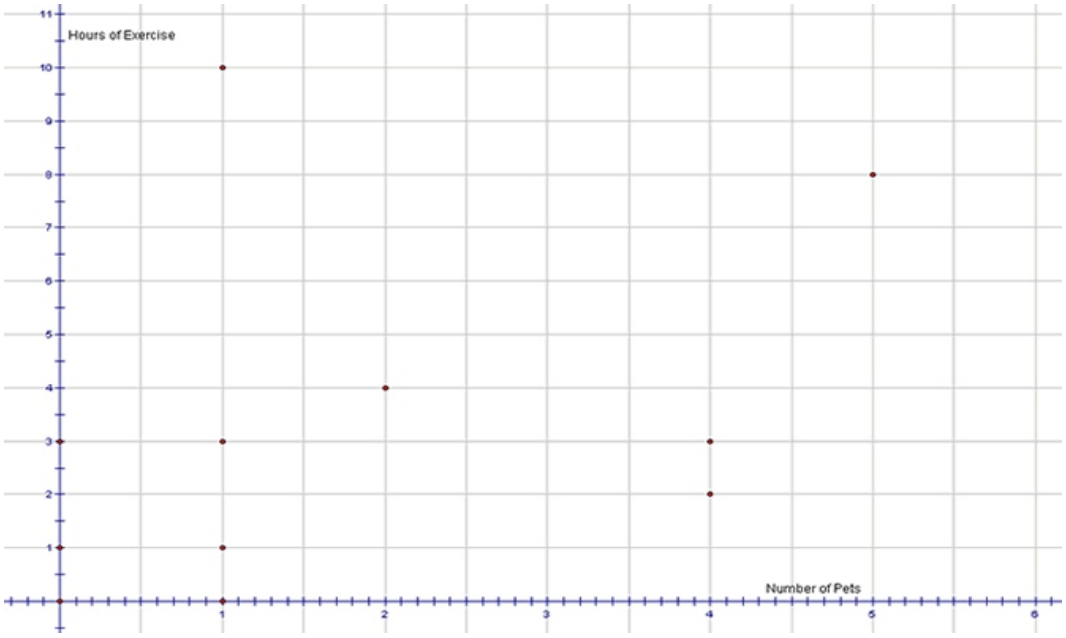
i) Traveling Across Canada



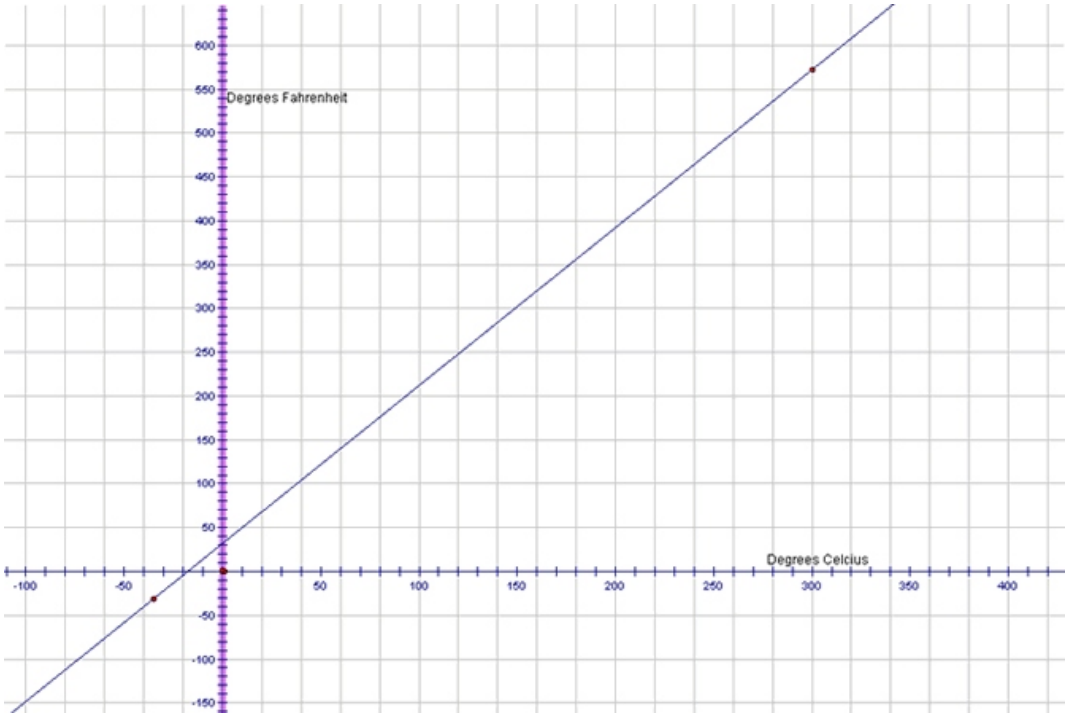
ii) Part-time Work and Average Mark



iii) Pets and Exercise



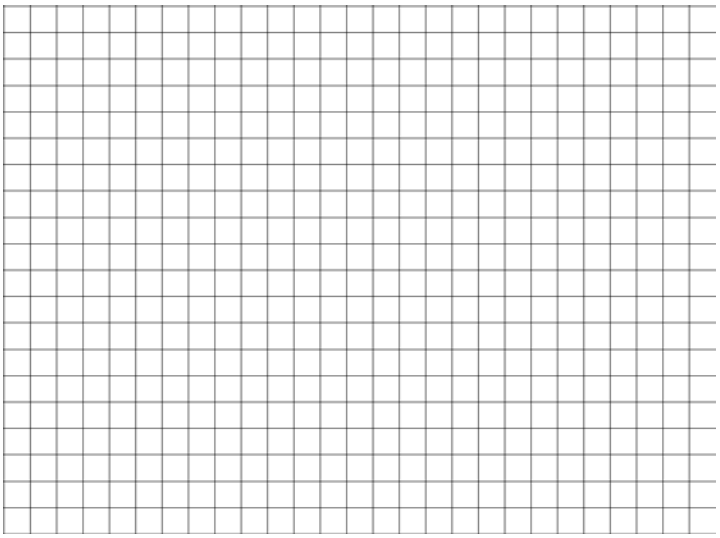
4. Use the attached graph that compares the Celsius and Fahrenheit scales, determine the following values.



a) What is the Celsius equivalent of -5ºF? b) What is the Fahrenheit equivalent of 18ºC?

5. The table shows the population of a bacterial colony growing in a test tube at various times.

Time (h)	0	1	2	3	4	5	6	7	8
Population (thousands)	1	1.4	2.0	2.7	3.8	5.4	7.5	10.5	14.8



a. Use a graph to describe the growth of the colony.

b. Use a graph to estimate the population of the colony after 7.5h.

c. Predict the future trend of the curve.

6. In physics, we use velocity instead of speed to describe motion. Velocity is the slope of a distance-time graph.

Describe the motion from the following d-t graph: