

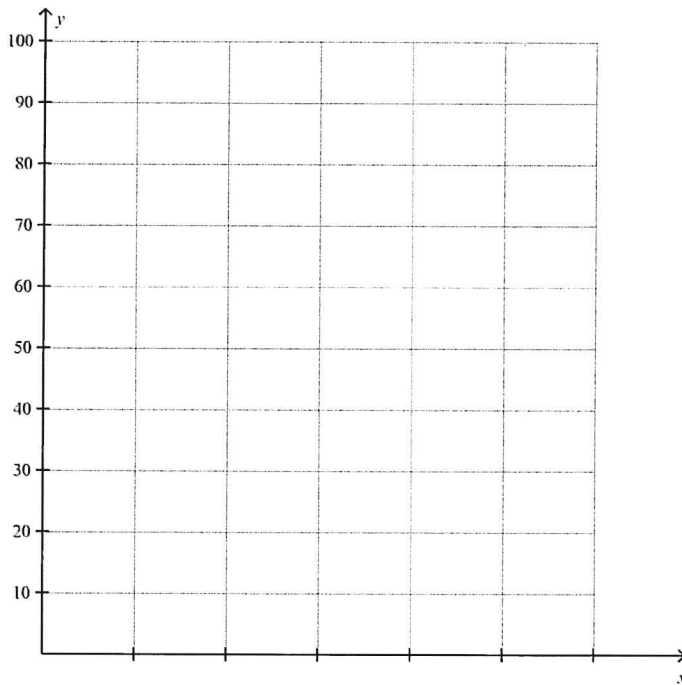
Name: _____ Class: _____ Date: _____

Probability & Statistics Mid-Chapter 2 Test Review Worksheet

1. Yellowstone National Park surveyed a random sample of 1526 winter visitors to the park. The survey asked each person if he or she owned, rented, or had never used a snowmobile. Respondents were also asked whether or not they belonged to an environmental organization (like the Sierra Club). The two-way table summarizes the survey responses.

		Environmental club		
		No	Yes	Total
Snowmobile use	Never used	445	212	657
	Snowmobile renter	497	77	574
	Snowmobile owner	279	16	295
	Total	1221	305	1526

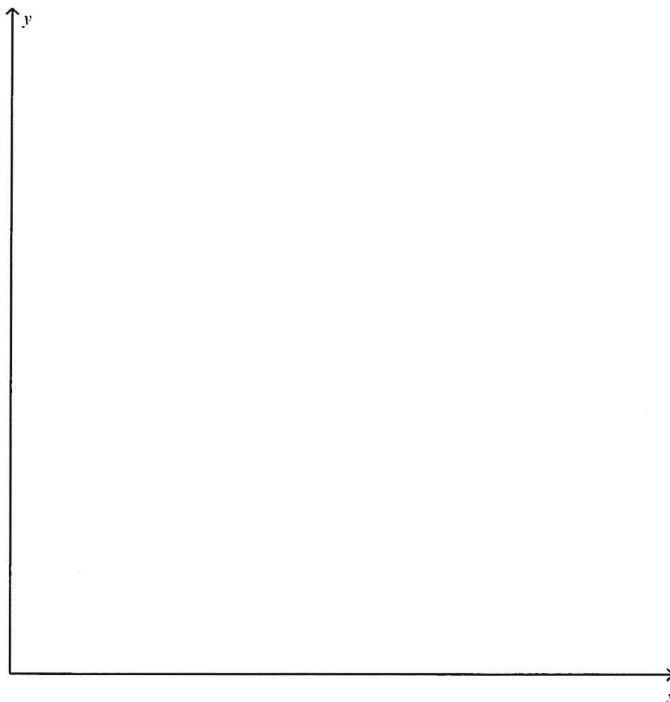
- a.) Make a segmented bar chart to show the relationship between environmental club membership and snowmobile use for the members of the sample.



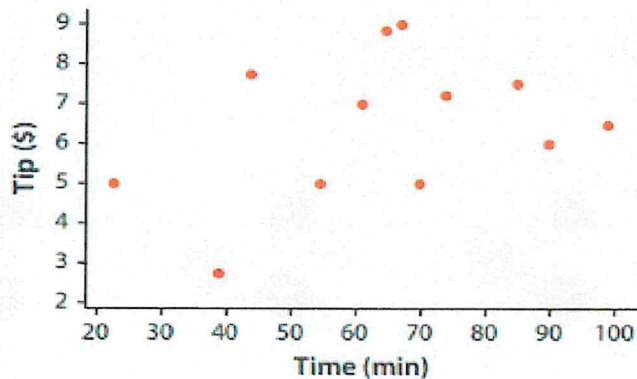
- b.) Based on the graph, is there an association between these variables? Explain your reasoning. If there is an association, briefly describe it.

2. What does a country's income per person (measured in adjusted gross domestic product per person in dollars) tell us about the mortality rate for children under 5 years of age (per 1000 live births)? Here are the data for a random sample of 14 countries in a recent year. Make a scatterplot of the relationship between income and child mortality. Describe what you see.

Country	Mortality rate	Income per person
Switzerland	4.4	38,003.90
Timor-Leste	56.4	2,475.68
Uganda	127.5	1,202.53
Ghana	68.5	1,382.95
Peru	21.3	7,858.97
Cambodia	87.5	1,830.97
Suriname	26.3	8,199.03
Armenia	21.6	4,523.44
Sweden	2.8	32,021.00
Niger	160.3	643.39
Serbia	7.1	10,005.20
Kenya	84.0	1,493.53
Fiji	17.6	4,016.20
Grenada	14.5	8,826.90



3. Do customers who stay longer at buffets give larger tips? Charlotte, a statistics student who worked at an Asian buffet, decided to investigate this question for her second-semester project. While working as a hostess, she obtained a random sample of receipts, which included the length of time (in minutes) the party was in the restaurant and the amount of the tip (in dollars). Here is a scatterplot of these data.



- a.) Interpret the value $r = 0.36$.
- b.) Does increasing the amount of time spend in the restaurant cause an increase in the amount of the tip? Explain.
4. Each of the following statements contains an error. Explain what is wrong in each case.
- a.) There is a high correlation between the gender of American workers and their income.
- b.) We found a high correlation ($r = 1.09$) between SAT scores and GPA for a sample of high school students.