AP STATS SUMMER READING PRACTICE PROBLEMS

NAME:

Question 1 (10 marks)**.** For each of the following possible investigations, classify the variable as *categorical*, *quantitative discrete* or *quantitative continuous*:

(a) the heights of the members of a football team

(b) the number of children in a Japanese family

(c) the pets owned by students in a year 8 class

(d) the amount of sunshine in a day

(e) the amount of rainfall in each month of the year

(f) the most popular colours of cars

(g) the time spent doing homework

(h) items sold at the school canteen

(i) the number of matches in a box

(j) the pulse rates of a group of athletes at rest

Question 2 (10 marks)**.** A class of 20 students was asked "How many pets do you have in your household?" and the following data was collected:

0 1 2 2 1 3 4 3 1 2 0 0 1 0 2 1 0 1 0 1

(a) What is the variable in this investigation? Is the variable discrete or continuous?
(b) Construct a dotplot to display the data.
(c) Describe the distribution of the data. (Is it symmetrical, positively skewed or negatively skewed? Are there any outliers?)
(d) What percentage of the households had no pets?
(e) What percentage of the households had three or more pets?

Question 3 (10 marks)**.** The data set below is the test scores (out of 100) for a Stats test for 50 students:

56	29	78	67	68	69	80	89	92	71
58	66	56	88	81	70	73	63	74	38
67	64	62	55	56	75	90	92	47	44
59	64	89	62	51	87	89	76	59	88
72	80	95	68	80	64	53	43	61	39

(a) Construct a tally and frequency table for this data using intervals 0 - 9, 10 - 19, 20 - 29, ..., 90 - 100.
(b) What percentage of the students scored 80 or more for the test?
(c) What percentage of students scored less than 50 for the test?
(d) Copy and complete the following:
More students had a test score in the interval ..... than in any other interval.

Question 4 (10 marks)**.** It is estimated that 32% of US teens spending goes towards food. Assume that the yearly ammounts spend on food can be approximated by a normal model with a mean of $600 and a standard deviation of $120.

(a) A teen spending $720 would be at what perentile?
(b) What percent of American teens spend between $360 and $840 per year on food?