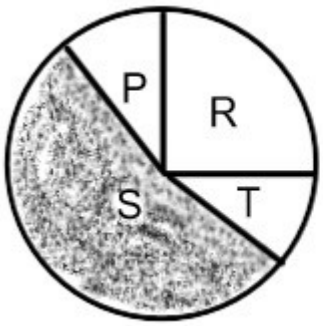
MTH-1102

Pretest DB

1) (6 marks) Below are some grades from a quiz:

30	23	a) Find the minimum b) Find the maximum c) Find the range d) Find the mean e) Find the mode f) Is this data discrete quantitative, continuous quantitative or qualitative?
36	32	
32	31	
31	29	
24	21	
35	17	
26	27	
32	38	
16	37	

2) (4 marks) The following pie graph shows the amounts of Pea, Rhubarb, Sprout and Tomato plants in my garden. The total number of plants is 270.



$\angle R = 88^{o}$

$\angle P$ and $\angle T$ are congruent

$\angle S = 200^{o}$

a) What percentage of the plants are in the shaded S region?
b) How many Pea plants are there?

3) (4 marks) I am making a questionnaire to find out which meals the residents in my seniors home want for next month. The school has 250 residents and I will question all of them. I decide to ask each person their age, what food allergies they have, their apartment number, how many meals per month they have signed up for, and to list their three favorite meals.

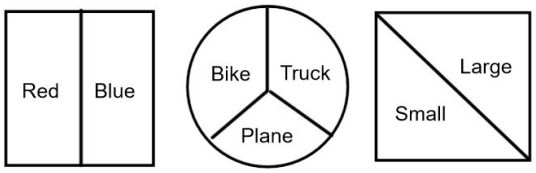
a) Which of these values will be qualitative and which will be quantitative?
b) Is this a census, a study or a sample survey? Justify.

4) (4 marks) The residence has 250, residents, including 25 people who 60 years old or less, 160 people between the ages of 60 and 75, and 65 people aged over 75 years. Below is a table that shows which meals were eaten by residents of different age groups:

	≤ 60	$60 < x \leq 75$	$x > 75$
Breakfast	12	110	55
Lunch	10	125	54
Supper	20	155	65

a) What percentage of people over 60 ate breakfast?
b) What percentage of residents less than or equal to 60 years of age ate lunch?

5) (7 marks) The following diagram shows choices kids can make about a wooden toy they will receive:



a) Draw a tree diagram of this situation.
b) How many combinations are possible?
c) Calculate the probability of randomly selecting a Large bike.

6) (7 marks) A high school has a field day, with games and sports. The school circulates several questionnaires during the event, to find out who is attending and what activities they enjoy the most. There are target games, card games, many non-contact sports, games of skill, raffles and puzzles.

Within this situation, give an example of each of the following:

A sample	A certain event
Equiprobable events	A theoretical probability
Systematic sampling	Dependent events
A representative sample	An impossible event
An experimental probability	Complementary events
Independent events	Random sampling
Stratified sampling	A probable event

7) (4 marks) Find three sources of bias in the following situation.

In the seniors' residence, there are 90 men and 160 women. I want to do a survey to find out what TV shows should be shown in the lounge. I ask the opinion of the first 20 men and the first 20 women who show up for breakfast in the dining room one morning.

8) (20 marks) Skiers 1 and 2 recorded the following times, in seconds, on the slalom course:

	Race 1	Race 2	Race 3	Race 4	Race 5	Race 6	Race 7
1	62	63	65	54	50	48	56
2	50	53	56	60	63	49	63

Make an appropriate graph to illustrate this situation and draw three conclusions from the graph.

9) (4 marks) The following tables show the results of two surveys that were done by some Math students. For each set of data, answer the following:

1) Which, of mean or mode, is more appropriate to use when analyzing the results? Justify.
2) Find the most relevant measure in each case.

Favorite Color
Red
Blue
Orange
Blue
Red
Blue
Green

Most Recent Math Exam Grade (%)
81
61
74
64
74
85
74

10) (20 marks) Below are the sports chosen by students as activities this year. Make a pie graph:

Sport	Number of Students
Basketball	21
Wrestling	11
Volleyball	26
Soccer	40
Archery	6
Skiing	18
Hockey	30

11) (20 marks) I work in the equipment rental shack at a small ski hill. I have gathered some data that shows that half of the customers who visit the shack rent skis, three eights rent snowboards and the rest rent snowblades. Nine tenths of the customers rent boots. None of the snowboarders take poles, only one tenth of the snowbladers take poles, and five sixths of the skiers take poles.

Illustrate this situation with a tree diagram. If I choose a customer at random, what is the probability that the person I chose is a snowblader who did not take boots but who uses poles? Show the ordered triple that goes with this situation, and show your calculation.