

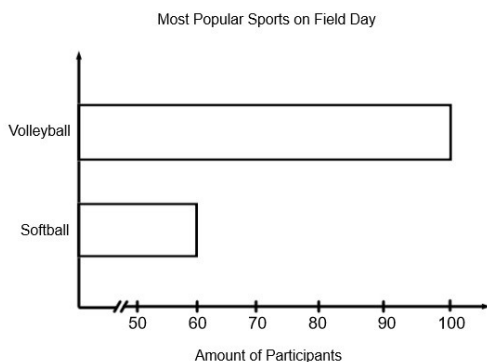
# MTH-1102

## Pretest DA

1) (6 marks) Below are some Math grades

80%	63%	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?
76%	42%	
42%	71%	
61%	89%	
64%	71%	
85%	77%	
96%	67%	
32%	58%	

2) (4 marks) A company plans a field day and surveys its employees to see which sport they would like to play. The results are shown in the following graph:



- After looking at this graph, a student says that it looks like the number of people who prefer volleyball is triple the number of people who prefer softball. Is the student correct? Explain your answer.
- Based on the information shown in this graph, what is the probability that the next person to be surveyed chooses softball?

3) (4 marks) I am making a questionnaire to find out which extra-curricular activities the students in my school want for next year. The school has 350 students and I will question 75 of them. I decide to ask each person their age, whether they are a day student or night student, whether they have already graduated from high school or not, how far in kilometers they live from the school, whether they drive or take the bus, and their grade on their most recent physical education course.

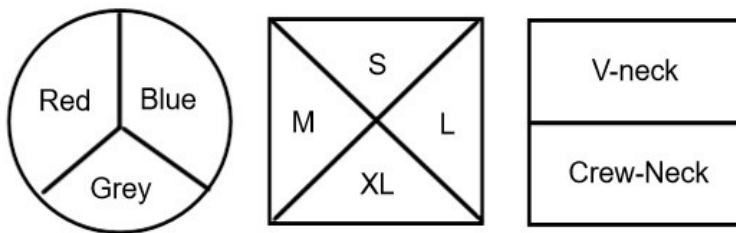
- Which of these values will be qualitative and which will be quantitative?
- Is this a census, a study or a sample survey? Justify.

4) (4 marks) Below is a table that shows which races were run by people of different age groups:

	Kids	Adults	Seniors
2km	60	10	20
5km	20	180	20
10km	0	80	10

- What percentage of 5km runners were not seniors?
- What percentage of runners were seniors who chose the 10km race?

5) (7 marks) The following diagram shows the color, size and design that are available for a new t-shirt you are buying:



- Draw a tree diagram of this situation.
- How many combinations are possible?
- Calculate the probability of randomly selecting a Large t-shirt with a crew-neck.

6) (7 marks) 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) How do you find bias in a sample survey?

8) (4 marks) How do you decide whether it is best to do a census, a study or a sample survey?

- 9) (20 marks) Student A and Student B obtained the following grades in the Sec I, II and III Math exams:

	1101	1102	2101	2102	3051	3052	3053
A	80	82	84	75	71	90	54
B	64	67	71	78	83	96	70

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

- 10) (20 marks) Below are the grades on Math exams so far this year. Make a pie graph:

Grade	Number of Students
[30,40[	1
[40,50[	1
[50,60[	2
[60,70[	4
[70,80[	3
[80,90[	4
[90,100]	0

- 11) (20 marks) I teach Science, English and Math in my individualized class at my small one-classroom schoolhouse. Nobody is allowed to study more than one course at a time in my class. One quarter of the students choose Science to start, one quarter choose Math and the rest choose English. When students start with English, one third of them choose Science as their second course and the rest choose Math. When students start with Math, half choose Science as their second course. When students start with Science, nine tenths of them choose Math as their second course.

Illustrate this situation with a tree diagram. If I choose a name at random, what is the probability that the person I chose started with Science and finished with English? Show the ordered triple that goes with this situation, and show your calculation.