

Math 156 Test Four
Section X01

Time: 50 Minutes
Total: 20 Marks

Name: _____

1. [2 marks] Find the mean and median of the following sample:
6, 29, 8, 25, 16, 12

2. [3 marks] The mean of a population is 35 and the standard deviation is 5.
What percentage of measurements will fall between 28 and 42?

3. [3 marks] A student scored 83 on a math test, which had a mean of 73 and a standard deviation of 5. The student scored 79 on a coding test, which had a mean of 73 and a standard deviation of 2.

a) Calculate the student's z -score for the math test.

b) Calculate the student's z -score for the coding test.

c) On which test did the student do better relative to the class?

4. [3 marks] A password is 4 symbols long and can use numbers $0, 1, \dots, 9$ as well as the four special characters $\#, \$, \%, \&$.

a) How many possible passwords are there?

b) How many passwords contain only numbers?

c) How many passwords contain at least one special character?

5. [3 marks] Forty students were polled on whether they are left-handed or right-handed and whether they prefer a laptop or tablet. Consider the data below.

	Prefers Laptop	Prefers Tablet
Left-Handed	3	5
Right-Handed	11	21

Find the probability that a student:

a) prefers a tablet

b) prefers a laptop and is right-handed

c) prefers a laptop or is left-handed

6. [2 marks] Find k so that the following is a probability distribution:

X	$P(X)$
1	0.21
2	0.17
3	k
4	0.39

7. [4 marks] A population's mean is 35, median is 31, range is 20 and standard deviation is 5.

a) Find the new mean if every measurement is increased by 2.

b) Find the new standard deviation if every measurement is increased by 2.

c) Find the new median if every measurement is multiplied by 3.

d) Find the new range if every measurement is multiplied by 3.