

Name: _____

Date: _____

TOTAL = _____ = _____
60 100**Unit 8 – Statistics**
Practice Test - Version B**PART 1: MULTIPLE CHOICE (EACH QUESTION IS WORTH 4 MARKS)****1** In which of the distributions below is the mean equal to the range, to the mode and to the median? **4 | 0**

A) 1, 1, 1, 1, 1

C) 1, 1, 1, 2, 2

B) 1, 3, 3, 3, 5

D) 1, 2, 2, 2, 3

2 You are a travel agent who has to organize a tour of Montreal for a group of 25 people. You know the following about the group: **4 | 0**

- The range in age is 80 years.
- The mean age is 40 years.
- The median age is 15 years.
- The modal age is 10 years.

Given this information, which of the statements below is necessarily **TRUE**?

A) All the people in the group are about the same age.

C) At least one person is 25 years old.

B) More than half the people are less than 10 years old.

D) At least one person is older than 65.

3 At a gymnastics competition, each judge gives a mark between 0 and 10 to the different participants. The marks obtained by one participants are as follows: **4 | 0**

5, 6, 6, 7, 7, 7, 7, 8, 8, 9.

Which of the following statements is **TRUE**?

A) Removing the highest and lowest results will change the mean.

B) The mode, the median and the mean have the same value in this distribution.

C) 50% of the results obtained by this participant are less than the mean.

D) The median is greater than the mean of the results in this distribution.

4 The following **12** measures, in grams, were recorded in the course of a biology experiment: **4 | 0**

3, 4, 5, 5, 5, 6, 8, 8, 10, 12, 18, 21.

The mean of this distribution is 8.75 g. Which of the following statements is **TRUE**?

A) There are two modes in this distribution.

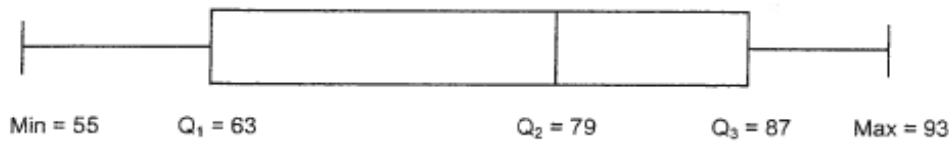
B) There are exactly six measures higher than the median.

C) The median is one of the measures in the distribution.

D) In this distribution, the mean is less than the median.

5 The following box and whisker plot represents the math term marks of 120 sec 4 students.

4 | 0



Which of the following statements about this distribution is **TRUE**?

- A) The mean mark is 79.
- B) The interquartile range is 38.
- C) At least 30 students earned a mark of 87 or higher
- D) The greatest concentration of marks is in the first quarter.

6 What grade did Valerie receive in her exam if her term average is 76.5?

4 | 0

Category & weighting	Test 1 (15%)	Project 1 (20%)	Test 2 (15%)	Project 2 (20%)	Exam (30%)
Result	74	66	80	78	?

- A) 84.5
- B) 80
- C) 82
- D) 82.5

PART 2: SHORT ANSWERS (EACH QUESTION IS WORTH 4 MARKS)

7 Students are going to the end of the year trip at Calypso Water Park. The Classes are broken down by the students overall academic average.

4 | 2 | 0

Determine the **modal class** and the **mean** for this data.

Overall Average	Frequency
[50-60[	10
[60-70[	26
[70-80[	42
[80-90[	34
[90-100]	12
Total	124

Mo = _____

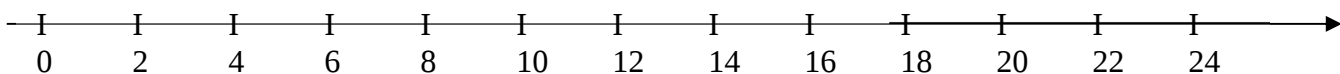
Mean = _____

8 The following scores were obtained from 20 people in a psychology experiment in which memory was tested.

4 | 0

5 6 6 7 7 7 8 9 10 12 14 16 16 16 17 17 18 18 20 24

Construct the box-and-whisker graph for this data.
(Clearly label your diagram.)



9 Given the following distribution: 12, 13, 15, 18, 20, 22, 22, 33, 34, 36

4 3 2 1 0

A) Find the range. _____

C) Find the median. _____

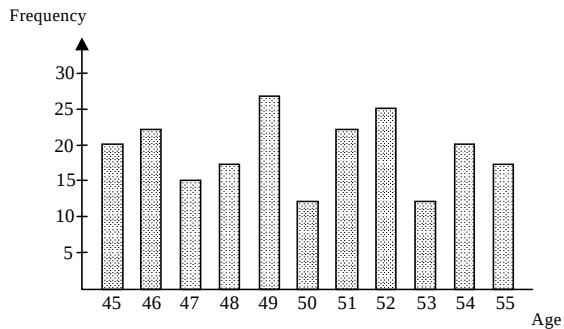
B) Find the mode. _____

D) Find the mean. _____

10 The bar graph to the right shows the distribution of a company's employees in the 45 to 55 year-old range. What is the mode of this distribution?

4 0

Mode is _____

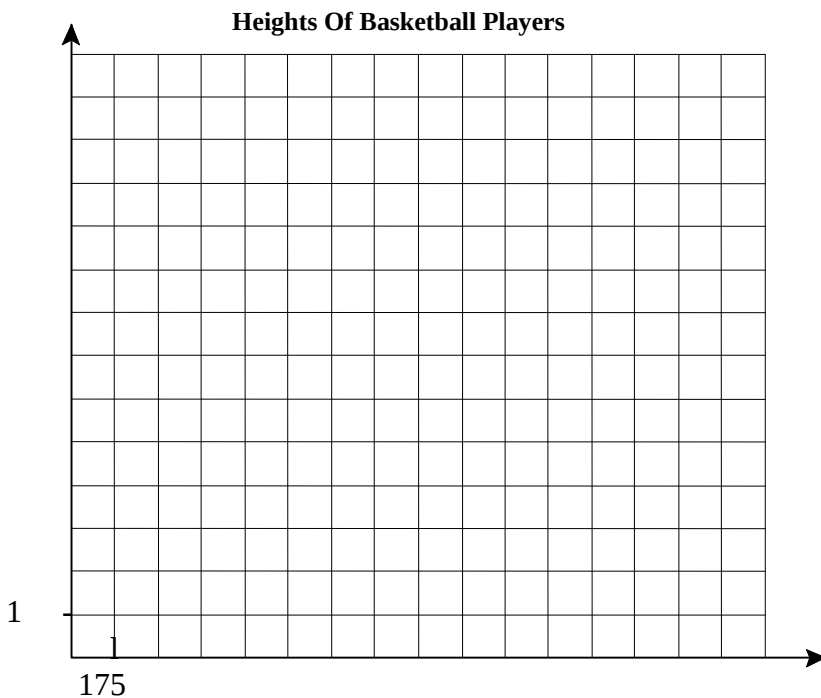


PART 3: EXTENDED ANSWERS (EACH QUESTION IS WORTH 10 MARKS)

11 The heights of 50 basketball players are recorded in the grouped data table below.

10 9 8 7 6 5 4 3 2 1 0

a) Construct a histogram of this distribution on the graph below. Label the axes.



Heights of players (cm)	# of players
[175, 180[	3
[180, 185[	6
[185, 190[	9
[190, 195[	9
[195, 200[	10
[200, 205[	13

b) What is the modal class?

c) What is the approximate mean? Show ALL work.

12

The following results were obtained by 11 students in a math test:

10	9	8	7	6	5	4	3	2	1	0
----	---	---	---	---	---	---	---	---	---	---

31 43 57 60 68 74 80 80 92 93 95

Cleo’s mark is identical to Quartile 2 of the data.

Amanda’s mark was higher than 75% of her classmates, but she was not the highest.

Marina’s mark is the first number lower than the mean of the data.

Tristan’s mark is in the second highest quarter of the data.

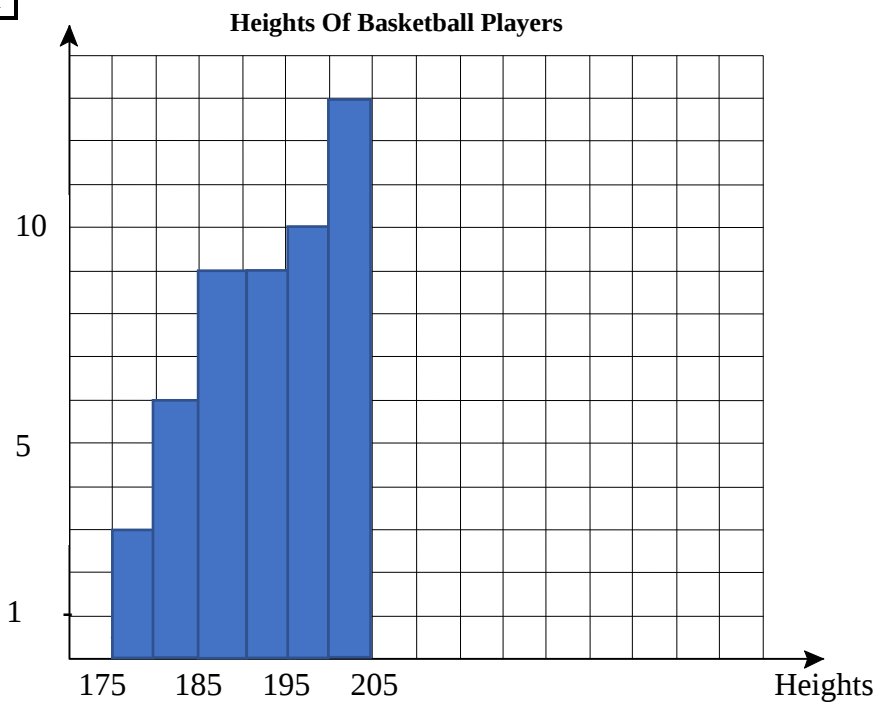
- **Construct a Box and Whiskers plot for the given marks.**
- **List the students’ names and their marks in decreasing order of the marks they received. Show all the work you needed to arrive at this listing.**

In decreasing order the students’ names and marks are

- 1 D 2 D 3 B
4 B 5 C 6 C
7 Mo = [70,80[or 75; mean = 75.97
8 min=5; Q1=7; Q2=13; Q3=17; max=24

- 9 A) 24, B) 22, C) 21, D) 22.5; .
10 49.

11



b) Modal class is [200, 205[

$$\begin{aligned} \text{c) Mean} &= \frac{(177.5 \times 3) + (182.5 \times 6) + (187.5 \times 9) + (192.5 \times 9) + (197.5 \times 10) + (202.5 \times 13)}{50} \\ &= 9655/50 \\ &= 193.1 \text{ cm} \end{aligned}$$

- 12 Amanda 93%
Tristan 80%
Cloe 74%
Marina 68%.