

End of the School Year

Mon. 6/4 - Final Review

Tues. 6/5 - **FINAL EXAMS**

Wed. 6/6 - **FINAL EXAMS**

Tuesday, June 5, 2018

- Four Period day.
-
- One hour, 25 minute classes

Period 1: Study Hall	8:05-9:30
Period 2	9:40-11:05
Period 3	11:15-1:10*
<i>*Lunch to be determined</i>	
Period 4	1:20-2:45

Wednesday, June 6, 2018

- Four Period day.
-
- One hour, 25 minute classes

Period 1: Finals	8:05-9:30
Period 5	9:40-11:05
Period 6	11:15-1:10*
<i>*Lunch to be determined</i>	
Period 7	1:20-2:45

Tues. 1st hour study hall: If you would like to study with a teacher (***who is not your 1st hour teacher***), ask them for a pass to come to their classroom. Then give this pass to your 1st hour teacher.

Tuesday, June 5, 2018

- Four Period day.
- Lunch with period 3 teacher.
- One hour, 25 minute classes

Period 1: Study Hall	8:05-9:30
Period 2	9:40-11:05
Period 3	11:15-1:10*
<i>*Lunch to be determined</i>	
Period 4	1:20-2:45

Wednesday, June 6, 2018

- Four Period day.
- Lunch with period 6 teacher.
- One hour, 25 minute classes

Period 1: Finals	8:05-9:30
Period 5	9:40-11:05
Period 6	11:15-1:10*
<i>*Lunch to be determined</i>	
Period 7	1:20-2:45

Warm-up: Unit 7 Statistics

Find the median, lower quartile, upper quartile, and interquartile range for each data set.

3)

Life Expectancy

State	Years	State	Years	State	Years	State	Years
South Dakota	74.3	New Hampshire	80.1	Minnesota	80.3	Wisconsin	79.8
Colorado	80.9	Indiana	81.3	South Carolina	78.3	Kansas	78.6
District of Columbia	77.9	Nebraska	79.8	Connecticut	82.7	Pennsylvania	81.6
Arizona	79.3	Massachusetts	83.8	Louisiana	78.2	Iowa	79.8

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3)
$$IQR = Q_3 - Q_1 = 81.15 - 78.45 = 2.7$$
 Life Expectancy

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South Dakota	<u>74.3</u>	New Hampshire	<u>80.1</u>	Minnesota	<u>80.3</u>	Wisconsin	<u>79.8</u>
Colorado	<u>80.9</u>	Indiana	<u>81.3</u>	South Carolina	<u>78.3</u>	Kansas	<u>78.6</u>
District of Columbia	<u>77.9</u>	Nebraska	<u>79.8</u>	Connecticut	82.7	Pennsylvania	<u>81.6</u>
Arizona	<u>79.3</u>	Massachusetts	83.8	Louisiana	<u>78.2</u>	Iowa	<u>79.8</u>

74.3, 77.9, 78.2, 78.3, 78.6, 79.3, 79.8, 79.8, 79.8, 80.1, 80.3, 80.9, 81.3, 81.3, 81.6, 82.7, 83.8

$$Q_1 = \frac{78.3 + 78.6}{2}$$

$$Q_1 = 78.45$$

Median
79.8

$$Q_3 = \frac{80.9 + 81.3}{2}$$

$$Q_3 = 81.1$$

Warm-up: Unit 8 Probability

State if each scenario involves a permutation or a combination. Then find the number of possibilities.

- 4) A group of 20 people are going to run a race. The top 9 finishers advance to the finals.

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- 4) A group of 20 people are going to run a race. The top 9 finishers advance to the finals.

Arranging 9 finishers

$$9! = 9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1$$

$$9! = 362,880$$

$$\frac{20 \cdot 19 \cdot 18 \cdot 17 \cdot 16 \cdot 15 \cdot 14 \cdot 13 \cdot 12}{F \quad F \quad F \quad F \quad F \quad F \quad F \quad F \quad F}$$

number of ways to arrange 9 finishers

$${}_{20}C_9 = \frac{20!}{(20-9)!9!} = 167,960$$

D

MEASURING THE CENTRE OF A DATA SET

What is a Measure of Central Tendency?

In this course we consider two statistics that are commonly used to measure the **centre** of a data set. These are the **mean** and the **median**.

A single value that attempts to describe a set of data by identifying the central position within that set of data.

Represents the "typical" value in the set

<https://statistics.laerd.com/statistical-guides/measures-central-tendency-mean-mode-median.php>

D

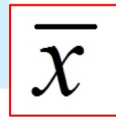
MEASURING THE CENTRE OF A DATA SET

THE MEAN (Average)

The **mean** \bar{x} of a data set is the statistical name for its *arithmetic average*. It can be found by dividing the sum of the data values by the number of data values.

$$\text{mean} = \frac{\text{the sum of the data values}}{\text{the number of data values}}$$

\bar{x} is read 'x bar'.



THE MEDIAN (Middle)

The **median** is the *middle value* of an ordered data set.

For an **odd number** of data, the median is one of the data.

For an **even number** of data, the median is the average of the two middle values. The median might not be one of the original data.

If there are n data values, find the value of $\frac{n+1}{2}$.

The median is the $\left(\frac{n+1}{2}\right)$ th data value.

THE MODE: Most frequent value

F**MEASURING THE SPREAD OF A DATA SET**

1) The Range - Difference between the maximum (largest data value) and minimum (smallest data value).

$$\text{range} = \text{maximum} - \text{minimum}$$

Textbook...**THE RANGE**

The **range** is the difference between the **maximum** or largest data value, and the **minimum** or smallest data value.

$$\text{range} = \text{maximum data value} - \text{minimum data value}$$

F**MEASURING THE SPREAD OF A DATA SET**

2) The Interquartile Range - The range of the middle half (50%) of the data.

$$\text{IQR} = Q_3 - Q_1$$

Lower Quartile(Q_1) - middle value of the lower half. 25% of data is less than or equal to Q_1 .

Upper Quartile(Q_3) - middle value of the upper half. 25% of data is greater than or equal to Q_3 .

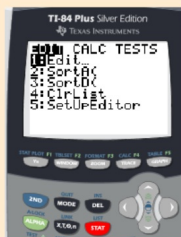
TI-84 Calculator

Example 12

 Self Tutor

For the data set 7, 3, 4, 2, 5, 6, 7, 5, 5, 9, 3, 8, 3, 5, 6, find the:

- a median
- b lower and upper quartiles
- c interquartile range.



L1	L2	L3	1
7			
3			
4			
2			
5			
6			
7			
5			
5			
9			
3			
8			
3			
5			
6			

L1(15) = 6



1-Var Stats L1

note: L₁ may need to be changed if your data is in a different list.

```
1-Var Stats
x̄=5.2
Σx=78
Σx²=462
Sx=2.007130147
σx=1.939071943
n=15
```

```
1-Var Stats
n=15
minX=2
Q1=3
Med=5
Q3=7
maxX=9
```

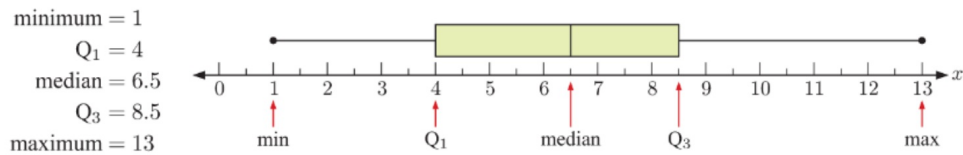
G

BOX-AND-WHISKER PLOTS

A **box-and-whisker plot** is a visual display of some of the descriptive statistics of a data set. It shows:

- the minimum value (min)
 - the lower quartile (Q_1)
 - the median (Q_2)
 - the upper quartile (Q_3)
 - the maximum value (max)
- These five numbers form the **five-number summary** of a data set.

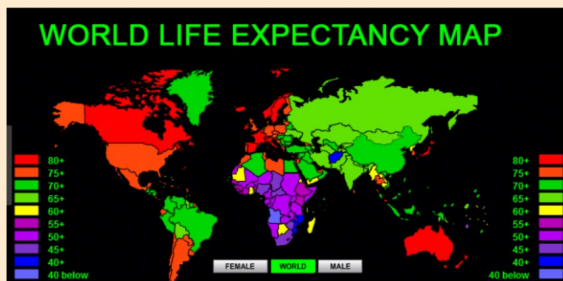
For **Example 13**, the five-number summary and corresponding box-and-whisker plot are:



- Notice that:
- the rectangular box represents the 'middle' half of the data set
 - the lower whisker represents the 25% of the data with smallest values
 - the upper whisker represents the 25% of the data with greatest values.

MYP Math 9 - Final Review

DO: Unit 7 Statistics & Unit 8 Probability Review



Done? Look over all
Units 1-8

Unit 7: Statistics

Find the mode, median, and mean for each data set.

1) Hours Slept

7.25	6.5	5.75	6	8
8.5	9	7.75	6.5	6.25
5.75				



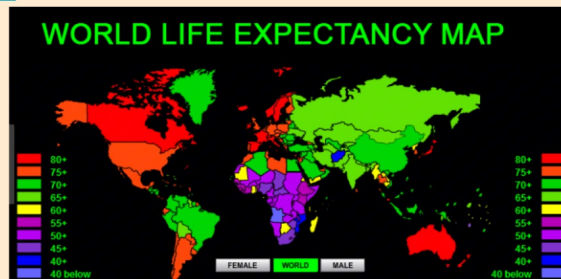
Unit 7: Statistics

Find the mode for each data set.

2) Life Expectancy by Country

Stem	Leaf
5	3 5 6
6	1 8
7	3 5 5 5 5 7 8
8	0 1 3

Key: 7|3 = 73



Unit 7: Statistics

Find the median, lower quartile, upper quartile, and interquartile range for each data set.

3)

Life Expectancy

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Unit 7: Statistics

4) Create a box plot for the state data above.

45) Complete the following sentences about the data above:

i. "50% of the states have a life expectancy between _____ and _____ years.

ii. "25% of the states have a life expectancy above _____ years."

iii. "75% of the states have a life expectancy above _____ years."

Unit 7: Statistics

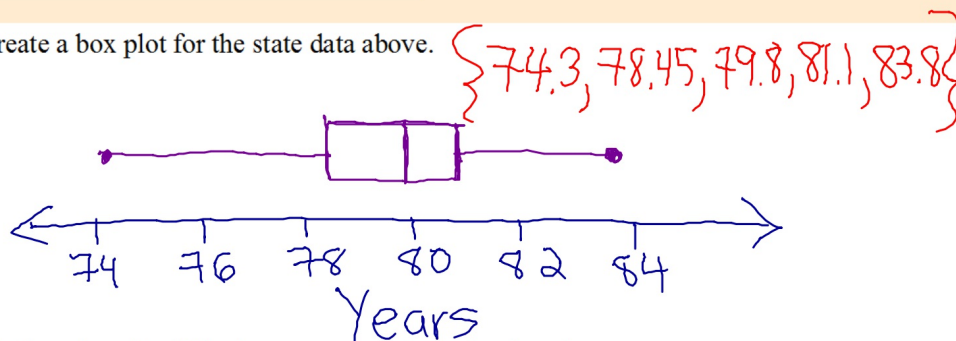
Short answers

Answers to Review - MYP Math 9 (ID: 1)

- 1) Mode = 5.75 and 6.5,
Median = 6.5 and Mean = 7.02
- 2) 75
- 3) Median = 79.8, $Q_1 = 78.45$, $Q_3 = 81.1$ and IQR = 2.65
- 4)

Unit 7: Statistics Answers

4) Create a box plot for the state data above.



45) Complete the following sentences about the data above:

- i. "50% of the states have a life expectancy between 78.45 and 81.1 years."
(many answer to i)
- ii. "25% of the states have a life expectancy above 81.1 years."
- iii. "75% of the states have a life expectancy above 78.45 years."

Unit 8: Probability

- 1) Two students are rolling two six sided dice. William says that the sum of 6 will occur more often than the sum of 7. Alex says the sum of 7 will occur more often than the sum of 6. Who is correct? How much greater are the odds?

Unit 8: Probability

Find the number of possible outcomes in the sample space.

2) You flip a coin twelve times.

Unit 8: Probability

Find the number of possible outcomes in the sample space.

3) A math quiz has five true/false questions.

Unit 8: Probability

State if each scenario involves a permutation or a combination. Then find the number of possibilities.

- 4) A group of 20 people are going to run a race. The top 9 finishers advance to the finals.

Unit 8: Probability

State if each scenario involves a permutation or a combination. Then find the number of possibilities.

- 5) The student body of 185 students wants to elect a president and vice president.

Unit 8: Probability

Find the number of possible outcomes in the sample space.

- 6) You are setting the combination on a three-digit lock. You want to use the numbers 381 but don't care what order they are in.

Unit 8: Probability

Find the number of possible outcomes in the sample space.

- 7) Jenny has homework in five subjects. She is deciding what order to complete them in.

Unit 8: Probability

Short answers

- 1) Alex is correct. $P(\text{sum of 7})=1/6$, $P(\text{sum of 6})=5/36$. There is a difference of $1/36$.
- 2) 4096
- 3) 32
- 4) Combination; 167,960
- 5) Permutation; 34,040
- 6) 6
- 7) 120