



## AMDM Summer Packet

Name \_\_\_\_\_

Dear Future AMDM Student,

I hope you are excited for your upcoming year in AMDM! The purpose behind this summer homework packet is to reacquaint you with the necessary skills to be successful in this year's math course.

At first glance this packet may seem overwhelming. However, there are approximately 9 weeks of summer. Pace yourself. There are 7 Parts of this packet – complete one part each day and you will easily be able to complete the assignment before your return to school in the fall. Please be prepared to submit this assignment during your **second** AMDM class. **It will be graded for accuracy as well as completion.** Work needs to be shown in a neat and organized manner, and it is perfectly acceptable to complete the packet on separate sheets of paper. Just be sure to staple any extra papers to the packet.

Show ALL work for each problem and take your time. Remember, this will be your first impression to your new math teacher, and you want to make sure that it is a positive one! See below for directions and helpful websites. We hope you have a wonderful summer!

Best,

Wareham High School Math Department

Assistance on the summer math assignment will be available from 10:30AM to 12PM August 9th, 11th, and 17th at Wareham High School. Feel free to stop by with any questions you might have. Additionally, you may email your questions to Mrs. Cavicchi at [kcavicchi@wareham.k12.ma.us](mailto:kcavicchi@wareham.k12.ma.us). To ensure the fastest response, please include your name, summer assignment name, and (if possible) a picture of the problem and your accompanying work.

## Part 1 Measures of Central Tendency

<https://www.khanacademy.org/math/probability/descriptive-statistics/central-tendency/v/statistics-intro-mean-median-and-mode>

**Example 2:** Now find the mean, median, and mode of the ages if the teacher's age, 50, is added to the data set. 11, 12, 11, 11, 12, 11, 11, 12, 11, 13, 50

Mean:  $11 + 12 + 11 + 11 + 12 + 11 + 11 + 12 + 11 + 13 + 50 = 165$ .  $165 / 11 = 15$ , so the mean is **15**.

Median: Order! 11, 11, 11, 11, 11, 11, 12, 12, 12, 13, 50  
The middle number is 11, so the median is **11**.

Mode: 11 appears most, so the mode is **11**.

**Find the mean, median, and mode of each set of data. Be sure to include labels.**

1.

14	20	20	27	10	19	14	20	14
16	18	13	22	16	20	17	13	14
19	24	26	21	18	20	14	22	16
12								

2. Birth rates per 1000 individuals for 54 African Nations from a 2009 Population Reference Bureau report.

14	23	25	31	34	36	38	39	41	43	46
17	23	26	31	35	37	38	39	41	43	46
18	24	28	32	35	38	39	39	41	44	47
21	25	29	33	36	38	39	40	43	45	53
23	25	30	33	36	38	39	40	43	45	

3. Hallux abducto valgus (call it HAV) is a deformation of the big toe that is not common among young people and often requires surgery. Doctors used X-rays to measure the angle (in degrees) of deformity in 38 consecutive patients under the age of 21 who came to a medical center for surgery to correct HAV. The higher the angle measure the more severe the deformity. Here are the data.

13 14 16 16 17 18 18 20 20 20 21 21 21 21 22 23 25 25 25  
25 26 26 26 26 28 28 28 30 30 30 31 32 32 32 34 38 38 50

## Part 2 Box Plot

<https://www.khanacademy.org/math/probability/descriptive-statistics/box-and-whisker-plots/v/constructing-a-box-and-whisker-plot>

- To calculate the 5 number summary:
  - Use CAS
  - By hand:
    - 1. Place values in order
    - 2. Find the median (middle value)
    - 3. Split the bottom half in two (this will be your lower quartile)
    - 4. Split the top half in two (this will be your upper quartile)
    - 5. Minimum and maximum values are just that- the lowest value and the highest value

### The IQR and Outliers

- The IQR is short for “Interquartile Range”
- To calculate IQR,  $IQR = Q_3 - Q_1$
- Outliers are calculated using the IQR.
- The rule for outliers is that if a value is outside  $1.5(IQR)$  then it is an outlier.
- So, if a value is more than  $Q_3 + 1.5(IQR)$  or less than  $Q_1 - 1.5(IQR)$  then it is an outlier.

Calculate the 5 number summary and create a box plot for each set of data from Part 1. Include a title, scale and label the axis.

4.

Lower Quartile	Median	Upper Quartile	Min	Max

5.

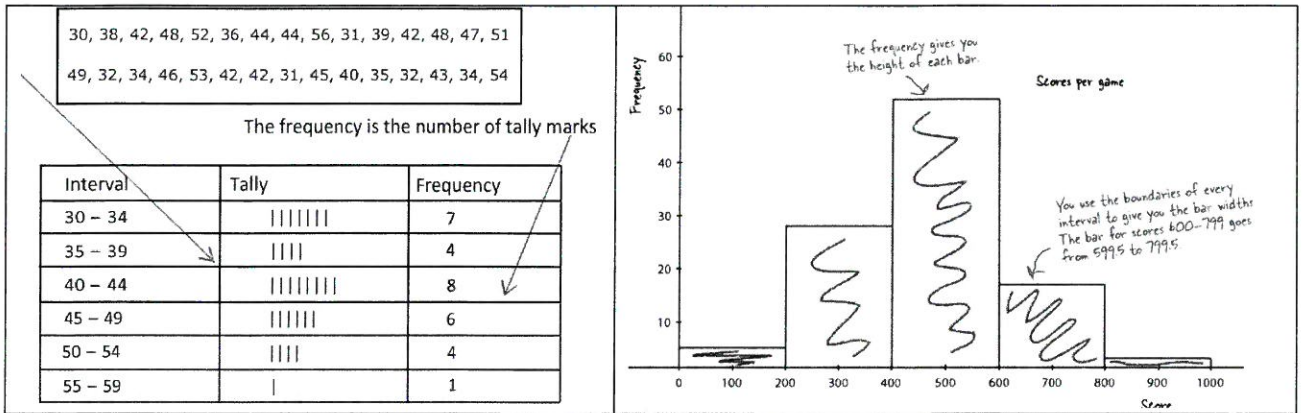
Lower Quartile	Median	Upper Quartile	Min	Max

6.

Lower Quartile	Median	Upper Quartile	Min	Max

### Part 3 Histograms

<https://www.khanacademy.org/math/cc-sixth-grade-math/cc-6th-data-statistics/histograms/v/histograms-intro>

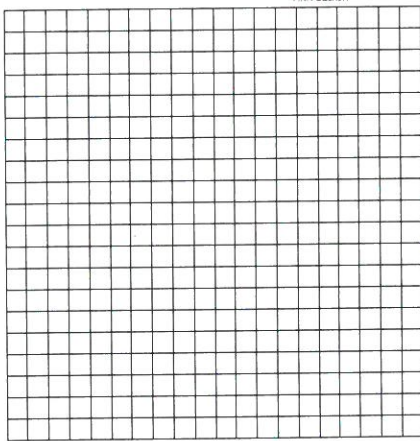


Create a frequency table and Histogram using the given information. Be sure to include a title, label each axis, and

#### 7. Number of crimes committed in 1984.

January	124	February	96	March	89
April	113	May	107	June	102
July	85	August	87	September	91
October	119	November	122	December	115

Interval	Frequency
80 - 89	
90 - 99	
100 - 109	
110 - 119	
120 - 129	



#### 8. Test scores for a high school Biology Test

81	77	63	92	97	68	72
88	78	96	85	70	66	95
80	99	63	58	83	93	75
89	94	92	85	76	90	87

Interval	Frequency
60 - 69	
70 - 79	
80 - 89	
90 - 99	

