

MTH 6610 - History of Math Reading Assignment #6

SUMMER 2018

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Name _____

Instructions. Read pages 183 - 208 to find the answers to these questions in your reading.

1. In what fields of study did Eratosthenes excel?
2. What was noteworthy about his three volume work, *Geographica*? (Name at least three things)
3. What tool for use in Number Theory may be considered Eratosthenes' most significant mathematical contribution?
4. For what Mathematical/Geographical contribution is Eratosthenes best remembered today?
5. What is noteworthy of Aristarchus of Samos?
6. What was noteworthy of Claudius Ptolemy's maps?
7. The inaccuracy of Claudius Ptolemy's maps gave impetus to what achievement, centuries later?
8. What details are known about Archimedes' life?
9. What discoveries regarding spheres and cylinders are attributed to Archimedes? (We're looking for two "discoveries.")
10. Briefly (but not too briefly) describe how Archimedes was able to approximate the value of pi to a value of $\frac{22}{7}$.
11. Describe how was Archimedes able to calculate the area bounded by the arc of a parabola, and the chord connecting the endpoints of the arc of the parabola.
12. Archimedes' use of the "Method of Exhaustion" is very similar to later mathematical innovations. What are they?
13. The lack of what "tool" made it impossible for Archimedes to progress beyond the results that he achieved using the Method of Exhaustion?

Also, do the following Homework Problems:

p. 208 1 d, e; 4; 5