

geom intro think-pair-share
Dr. Sarah's MAT 1010: Introduction to Mathematics

Part A: Answer all the questions below and type your responses for the forum. Add a new discussion topic with the subject as your preferred name and the post as your responses and any questions you have.

Part B: Respond separately to at least two of your classmates postings in a meaningful way. Use their preferred name (like Dr. Sarah is mine), with something new that justifies your position on (at least) one of the questions. Don't just say, "Yeah, I agree." Instead, say, "Yes preferred name, but we also need to consider..." Or, "Preferred name, I don't agree because..." You might also pose questions, answer questions, extend ideas, or compare and contrast your responses and summarize what you chose and why.

1. Of the following, what is the most compelling argument (to you) about ways we could know that the earth was round without modern technology?
 - a) The sun and moon are round so the earth should be (originally attributed to Pythagoras)
 - b) Ships disappearing on a clear day appear to sink in the horizon
 - c) Stars change as we change latitude and overlaps flip when we pass over the equator
 - d) Directions of hurricanes change from Northern to Southern Hemisphere (Coriolis force)
 - e) On midsummers day at noon, Syene (Aswan) made no shadows, while Alexandria did (Eratosthenes used this to calculate the circumference of the earth)
2. In Eratosthenes' experiments he found the light ray at Alexandria made an angle of 7.2°
 - 2a) Select a different angle that is between 6.2° and 8.2° (i.e. $7.2^\circ \pm 1$, like say there was a margin of error in experimentation) and list what angle you selected
 - 2b) Set up the ratios, still using the 5000 stadia between the cities, and solve for the circumference
 - 2c) Compute the difference between your circumference and the 250,000 stadia we obtained in classpost your responses to **all three of these**.
3. In your own words, how did walking the triangle show us intrinsically that the sum of the angles in a Euclidean triangle is 180° (i.e. summarize our activity)
4. Think of a cartoon or cartoon character and **answer all of the following** questions:
 - 4a) What is the name of the cartoon/cartoon character?
 - 4b) Apply our definition of dimension to their world (degrees of freedom of movement in space or efficient algebraic coordinates). What dimension do they live in?
 - 4c) Explain how can you tell?
5. List your responses to #5 from the geometry intro hand in assignment about local to global connections.
6. The industrial revolution arose in Benjamin Franklin's financial legacy as well as in the recent *Life By the Numbers* video. How did the industrial revolution come up in the *Life By the Numbers* video within the geometry intro hand in assignment?
7. In the geometry intro hand in assignment, how many mathematicians and artists did you find in #22?