

# [Astronomy](https://assignbuster.com/astronomy/)

Astronomy Questions Word Count: 500 (2 pages Answer the following questions regarding measurement and distance.    A. Why would the English system of units be more useful if a foot contained 10 inches? Use a math example and write out a clear reason. (75 words)
The English system of units would be more useful if a foot contained 10 inches because then it would be comparable to the metric system, which is a base-10 system. Since the foot equals 12 inches, for example, one has to convert that to a ratio in order to figure out what one foot would be in centimeters. That is just one math example but there are several others which demonstrate this logical point easily.
B. Why are some distances measured in light-years and some in astronomical units? Include a definition of each of these distance measurements. (80 words)
Some distances are measured in light-years and some are measured in astronomical units. This is because light-years are used to demonstrate how far away something is in the universe from Point A to Point B at the speed of light—which is very fast. Astronomical units are used for any measurement which has a certain reasonable length that humans can attain or reach. Light-years are usually reserved for objects too far away to ever be reached by one human’s lifetime.
C. Answer Review Questions 2 and 4, and Problems 2 and 4 on page 20 (Chapter 2) of the Seeds textbook.
Include all computations for the problems.
2. Answer the following questions regarding magnitude.
A. Discuss stellar magnitude. Include in your answer the definition of the term and the difference between absolute and apparent magnitudes. (55 words)
Stellar magnitude is the size and direction of a star. This is basically the star’s displacement. The difference between absolute and apparent magnitudes is that absolute magnitudes are fixed, real-time figures of information—whereas apparent magnitudes are just estimates based on what the human eye can see. That is the difference between the two phrases.
B. Relate how the magnitude scale was originally organized by Hipparchus and how todays astronomers have modified it. (50 words)
Hipparchus originally drew his magnitude scale using very rudimentary calculations and tools. Today’s astronomers have modified it slightly by using more advanced techniques and a much more modern approach to the magnitude scale. Now, physics students all over use the magnitude scale developed by today’s most advanced and talented scientists.
3. Answer the following questions regarding models of the universe.
A. Compare the Ptolemaic and Copernican models of the universe. State the main tenet of each theory; how they are alike or different, what evidence each used to support the ideas, and how each explained the retrograde motion of the inner planets. (150 words)
The Ptolemaic model of the universe stated that the universe revolved around the earth. Copernican theory stated that the model of the universe which was correct basically involved the universe revolving around the sun. They are both alike in the fact that both models involved the universe revolving around something—it was just that Ptolemy got it wrong. The evidence that Ptolemy used to support his claim was basically, he didn’t have evidence. It was by royal decree that the ruler in power wanted the earth to be the center of the universe. The evidence Copernicus used to show that the earth revolved around the sun was the entity of the eclipse—showing that the earth’s moon, when blocking the sun, meant that the sun was not revolving around the earth but vice versa. Ptolemy’s explanation of retrograde motion was basically inferior to that of Copernicus’s, to be very succinct.

B. How did Tyco Brahes model of the universe differ from that of Ptolemy or Copernicus? Explain the points of dispute. (20 words)
Brahe’s model had the wrong type of focus, whereas Ptolemy was closer, but Copernicus got it correctly the first time.
4. Discuss how Newtons law of universal gravitation explained or clarified the orbital circular motion of planets. Consider Keplers second and third laws to help you in your explanation. (70 words)
Newton’s law of universal gravitation explained the orbital circular motion of the planets definitely because it made perfect sense that gravity would be a universal force, also known as the g force. Kepler’s 2nd and 3rd laws of planetary motion reinforce this point because they have to do with the speed of the planets revolving around the sun at consistent, steady, measurable rates. This is why his laws are important.
BIBLIOGRAPHY
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Voelkel, James R. Johannes Kepler: And the New Astronomy. London: Oxford University Press, 1999.
Voelkel, James R. The Composition of Keplers Astronomia Nova. NJ: Princeton University Press, 2001.