

Sample Short Answer Questions

1. A rock in space is travelling toward the sun. Assume it misses the Sun and ignore the effect of sunlight and the other planets. Do or answer the following:
 - (a) Sketch a possible orbit for the case that its speed is below the escape velocity, and one for the case that its speed is above the escape velocity.
 - (b) What is happening to its Gravitational Potential Energy as it is travelling towards the Sun? What is happening to its Kinetic Energy? And what happens to the total energy, i.e., the sum of the potential and kinetic energy?
 - (c) Indicate for both orbits where in the orbit the speed will be the greatest and where the speed will be lowest. Also indicate for both orbits where the speed will be the same as it was at the starting point.
2. Copernicus, Tycho, Kepler, and Galileo broke with the traditionally held beliefs of how the world worked in various ways. For each, give one example of how their worldview differed from the Ptolomeian/Aristotelian one.