AP Language and Composition **First Quarter**
Mr. McBride

Journal Seven will ask you to write a fictional dialogue between two people where one of them is explaining the idea of Laplace's Demon to the other. This handout is intended to explain it to you so that you can complete the assignment.

Laplace's Demon

A scientific revolution began in the seventeenth century with Sir Isaac Newton's development of the calculus and the laws of classical mechanics. Thereafter, scientists viewed nature from a profoundly different perspective. For the first time, Newtonian physics made it possible for scientists to determine the dynamics of bodies by simple equations. Newton's work in this area was continued in the late eighteenth and early nineteenth centuries by the French physicist Pierre-Simon Laplace. Laplace is credited with the following famous quotation which is often referred to as "Laplace's Demon."

> We ought to regard the present state of the universe as the effect of its antecedent state and as the cause of the state that is to follow. An intelligence knowing all the forces acting in nature at a given instant, as well as the momentary positions of all things in the universe, would be able to comprehend in one single formula the motions of the largest bodies as well as the lightest atoms in the world, provided that its intellect were sufficiently powerful to subject all data to analysis; to it nothing would be uncertain, the future as well as the past would be present to its eyes. The perfection that the human mind has been able to give to astronomy affords but a feeble outline of such an intelligence. (Laplace 1820)—Marquis Pierre Simon de Laplace

<u>Questions</u>

1. How would "knowing all the forces acting in nature in a given instant" allow a hypothetical superior intelligence to know "the future as well as the past"?

2. How does the "the perfection that the human mind has been able to give to astronomy" provide an analogy or model that illustrates Laplace's Demon? (Hint: think back to Krutch's quote from *The Colloid and the Crystal*—"The astronomer can tell where the North Star will be then thousand years hence; the botanist cannot tell where the dandelion will bloom tomorrow." How *can* the astronomer tell?)