**Due on September 30 (2022)**

Read the paragraph from *Much Ado About (Practically) Nothing: A History of the Noble Gases* in the attachment titled *Science is Not a Train* and discuss the following:

1. According to the author (Fisher), is what she needs to do obvious to a scientist when she is trying to discover new knowledge (research)?

Scientists should move forward and gather knowledge at a slow steady pace as well as try again and again until light is seen at the end of the tunnel

Read the essay by Martin Schwartz, *The importance of stupidity in scientific research* and discuss the following:

1. Is the goal of scientific research to learn objectively ‘correct’ answers? Explain

While actively pursuing the ‘correct’ answer is the goal science, usually each problem deals with unknown. So, it’s impossible to determine if you’re asking the right questions or doing the right experiment or even getting the answer

1. What does Schwartz mean by ‘science being stupid’?

Science deals with unknowns and the infinite. Since our ignorance is infinite, the only possible course of action is to muddle through as best we can.

1. Is Schwartz’s description of science the same as the description that you learned before college? If not, discuss how Schwartz’s description of science is different from the one that you learned in grade school/junior high/high school/whenever.

No, because growing up Science was taught as the pursuit of knowledge, in which it is, but not to the sense that it is infinite. We were taught that we know a lot about the world and nature and that just knowing basic facts was all there is to science.

5) From both writings: Do scientists know when they have discovered a truth about nature? Why or why not?

Usually not since the realm of science is to deal with the infinite. While breakthroughs occur and are a huge occurrence, they have only determined a small piece of the truth and not the entire truth

6) Absolute proofs are possible in logic and in mathematics. As an example of an absolute proof, there cannot be any triangles that contain a 90o angle for which c2 does not equal a2 + b2. Are absolute proofs possible in science? Why or why not?

No because theories must account for all possible scenarios and aren’t designed to arrive at a certain endpoint.