Debate topics and associated lecture numbers

We will have five formal debates during the class. I will ask you to form groups of four (these groups need not remain the same for all debates), and will pose the topic. I will give each of the five groups of four ten minutes to discuss collectively the major points for or against the proposition. There will then be a random drawing to determine the role of each of the five groups. One will argue for the proposition, one will argue against, and the remaining three will be judges. For example, in the first debate, one group will argue that religion played a net positive role in the development of the scientific revolution, and another will argue that religion played a net negative role. I will give you five more minutes to work out your specific arguments. Then one person from one of the presenting groups (determined randomly) will get five minutes to present their position; unlike in competitive debates we are *not* looking for a fast presentation of many points, but are instead looking for a clear presentation of the key points. The other group will present their position in the next five minutes. The first group then gets five minutes for rebuttal, and finally the second group gets five minutes for further elaboration and rebuttal. Each of the three judging groups get five minutes to determine the winner; not the group whose point they agree with, but the group who presented their side best. In the five minutes following we will poll each of the 12 judges to determine who they think won, and the winning group will get candy.

As you will know the topics in advance, I expect you to prepare in advance. With five debates, and four participants in each debate, we will arrange things so that all 20 students make one and only one appearance in the debate. These count in your participation score.

The debate topics and associated lecture numbers (noting that lecture 7 in the sequence is the midterm) will be:

2. Was religion a net positive or a net negative in the development of the scientific revolution?

3. Who was closer to right in their ideas about gravity and motion: Galileo or Aristotle? For this debate, only issues that could have been discussed prior to Galileo's telescopic observations are allowed.

6. Fundamentally, how objective is science? Is it a progressively more accurate depiction of the truth, or does the experience with changing philosophies (e.g., Newton to Einstein) demonstrate that we are not in fact converging on what really is?

9. How much evidence do we need about a theory to believe its currently unobserved predictions? One point of view is that we can never believe any unobserved predictions, the other is that beyond some threshold of success it is reasonable to accept such predictions.

13. Is it important to study cosmology, or science in general, even if it never leads to practical advances? One side says no; practical consequences are the only important aspect of science. The other says yes; benefits beyond the practical are important.