Name_____ Date_____ Class Sec._____

Homework – Shoemaker's Freezing Time

Instructions: Use the attached reading on the next page to answer the questions below. Please answer in complete sentences. Make sure to explain your answer for full credit.

1. What two metaphysical properties is Shoemaker trying to separate from each other? Explain the experiment.

2. Please read the following section and then answer the question below:

> . . . . Those people who were in the region during the freeze will initially be completely unaware that the period of the freeze has elapsed, unless at the beginning of the freeze they happened to be observing one of the other regions. . . . To such a person it will appear as if all sorts of major changes have occurred instantaneously in the other region. . . .

What does it mean? Why is it relevant to the Shoemaker's thought experiment? Explain.

3. How does Shoemaker's thought experiment relate to the B-model of time? Explain.

READING ON THE NEXT PAGE

Shoemaker's Time-Freezing World

Consider . . . the following world. To the best of the knowledge of the inhabitants of this world, all of its matter is contained in three relatively small regions, which I shall call A, B, and C. These regions are separated by natural boundaries, but it is possible, usually, for the inhabitants of this world to pass back and forth from one region to another, and it is possible for much of what occurs in any of the regions to be seen by observers situated in the other regions. Periodically there is observed to occur in this world a phenomenon which I shall call a "local freeze." During a local freeze all processes occurring in one of the three regions come to a complete halt; there is no motion, no growth, no decay, and so on. At least this is how it appears to observers in the other regions. During a local freeze, it is impossible for people from other regions to pass into the region where the freeze exists, but when inhabitants of other regions enter it immediately following the end of a freeze, they find that everything is as it would have been if the period of the freeze had not occurred. . . . Those people who were in the region during the freeze will initially be completely unaware that the period of the freeze has elapsed, unless at the beginning of the freeze they happened to be observing one of the other regions. . . . To such a person it will appear as if all sorts of major changes have occurred instantaneously in the other region. . . .

. . . [L]et us suppose that it is found that in region A local freezes have occurred every third year, that in region B local freezes have occurred every fourth year, and that in region C local freezes have occurred every fifth year. Having noticed this they could easily calculate that . . . there should be simultaneous local freezes . . . in all three regions every sixtieth year. Since these three regions exhaust their universe, to say that there will be simultaneous local freezes in all three regions every sixtieth year is to

Source: Sydney Shoemaker. "Time Without Change." *Journal of Philosophy* 66.12 (1969): 363–381. 369–370, 370–371.

say that every sixtieth year there will be a *total* freeze lasting one year. Let us suppose . . . that no freeze is observed to begin by anyone at the time at which local freezes are scheduled to begin simultaneously in all three regions, and that the subsequent pattern of freezes is found to be in accord with the original generalization about the frequency of freezes. If all of this happened, I submit, the inhabitants of this world would have grounds for believing that there are intervals during which no changes occur anywhere.

The purpose of Shoemaker's thought experiment is to establish that, contrary to the widely held view that the passage of time necessarily involves change, it is conceptually possible for there to be time without change. But would the inhabitants of this world have grounds for believing that to be so, as Shoemaker claims?

One objection, anticipated by Shoemaker, focuses on the generalization to a simultaneous freeze in all three areas every sixtieth year: the inhabitants could have as easily generalized to predict that freezes occur every third, fourth, and fifth year, in areas A, B, and C, respectively, *with the exception* that all three regions skip a freeze every 59 years. According to this generalization, since there would never be a freeze in all three areas at the same time, there would never be a time without change. Why should the inhabitants accept the generalization they did instead of this alternate one? Shoemaker's answer appeals to the principle of simplicity (often called Occam's Razor): when there are equally reasonable competing explanations, accept the one that's simpler. But why?

Another, and perhaps more intriguing, objection to his thought experiment is that it doesn't provide a way for the total freeze to come to an end. Presumably, in the case of local freezes, some preceding event in an adjacent nonfrozen area causes the unfreezing of the frozen area, but in the case of a total freeze (that is, a time *without change*), what would cause the change from frozen to unfrozen? Can the mere passage of time have causal force?

And so, if, as Shoemaker's experiment shows, it *is* possible for there to be time without there being change, how can we know that *we* haven't undergone a total freeze, lasting perhaps billions of years, between "yesterday" and "today"?