Problem 1. In class, we saw that the following are lists according to the definition in the textbook:

$$(\ldots, -3, -2, -1, 0, 1, 2, 3, \ldots)$$
$$(\ldots, -2, -1, 0, 1, 2, 3, 4, \ldots)$$

Are these two lists equal to one another? Why or why not?

Problem 2. Hopefully the previous exercise and our discussion in class will convince you that the textbook's definition of a list is not entirely precise. Write down a precise definition of a LIST and what it means for two LISTs to be equal. In order not to confuse your definition with the textbook's, make sure to write LIST when discussing your definition, and reserve the word list for the textbook's definition.

Formulate your definition so that it has the following properties:

1. All finite lists, as defined in class, are LISTs according to your definition.
2. LISTs may be infinite to the right but not to the left. That is,

   $$(1, 2, 3, \ldots)$$

   should be a LIST according to your definition, but

   $$(\ldots, -3, -2, -1, 0, 1, 2, 3, \ldots) \qquad \text{and}$$
   $$(\ldots, -4, -3, -2, -1, 0)$$

   should *not* be LISTs according to your definition.

As part of your definition, you should explain what it means for two LISTs to be equal. Your definition of equality of LISTs should agree with the textbook's definition for finite lists.