Positive vs. Negative Feedback Cycles 2.0

**Directions: Read** each of the problems below carefully. For each cycle, **identify the key parts and draw a model of the feedback loop below**. **Decide if they are an example of a positive or negative feedback loop and explain why.** Identify what would be needed to add or take away from the feedback loop in order to stabilize it. If your feedback loop is already stable, identify one possible addition that would make it unstable.

Problem 1: As a result of global warming, polar regions receive more precipitation from warmer air carrying more moisture. The increase of snowpack and ice buildup could reflect solar energy away from Earth’s surface, causing it to cool.

\*Did you receive the same answers as your group members? Why or why not?

Problem 2: In warming climates, people use more air-conditioning and thus burn more fossil fuels. This results in an increase in carbon dioxide in the atmosphere, which leads to global warming.

\*Did you receive the same answers as your group members? Why or why not?

Problem 3: The warming Earth could melt a large amount of permafrost *(frozen soil)* at high latitudes. This could cause an increase in the release of methane, which is a by-product of decomposition of organic material in the melted permafrost layer. Methane is a greenhouse gas that contributes to the increase of temperature.

\*Did you receive the same answers as your group members? Why or why not?

Problem 4: As gasoline prices rise, more people decide to carpool to work. When more people carpool to work, they use less gasoline. As a result, gasoline prices lower.

\*Did you receive the same answers as your group members? Why or why not?