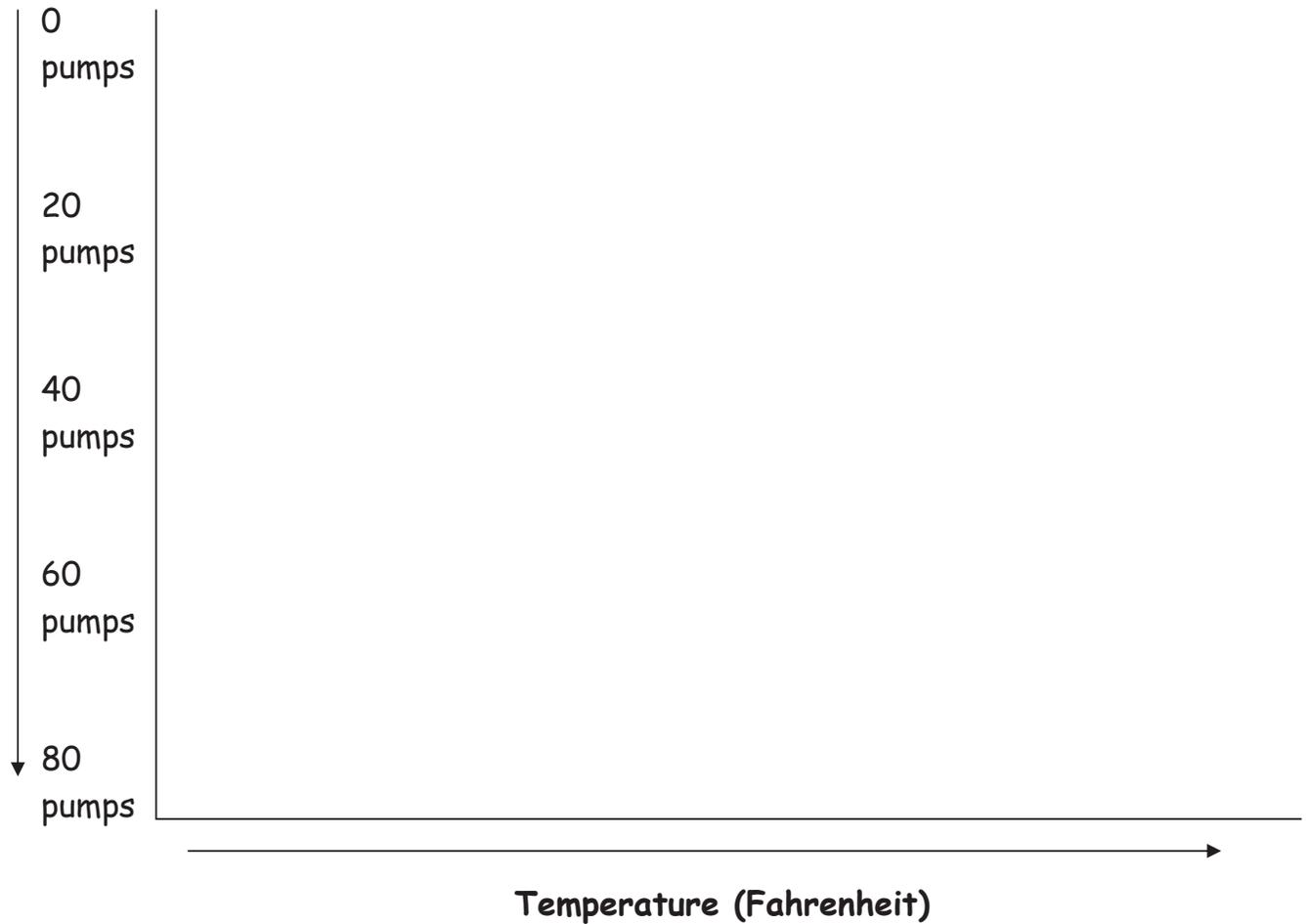




Temperature and Pressure

1. Screw the Fizz-Keeper pump into the bottle and ensure that the bottle is sealed. Turn the bottle toward you so that you can view the temperature strip easily. Try not to touch the bottle too much — the warmth from your hands will warm the bottle and the air inside.
2. Before you start pumping, record the temperature (in Celsius) inside the bottle at 0 pumps in the space provided on the next page.
3. Pump the Fizz-Keeper 20 times, then record the temperature and plot it on the chart. Repeat this process three more times. STOP at 80 pumps total — otherwise the bottle may pop! Record the temperatures and plot them.
4. Feel the sides of the bottle with your hands. Carefully remove the Fizz-Keeper and record the temperature inside the bottle.
5. Complete your plot by drawing a straight line that follows the general trend of your dots.
6. Connect the data points on your plot with a line. Add an arrow to your chart to show in which direction the temperature increased.

Pressure



At 0 pumps: At 20 pumps: At 40 pumps: At 60 pumps: At 80 pumps:

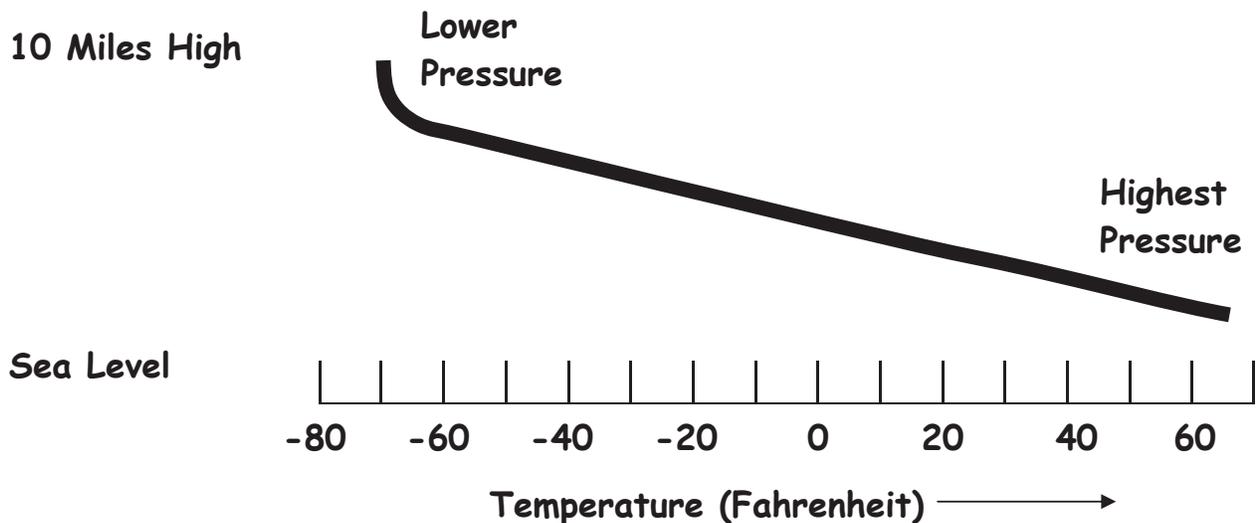
Temperature after cap was opened: _____

The air inside the bottle was no longer being compressed. What happened to the temperature?

Pumping the Fizz-Keeper compressed the air in the bottle more and more. What happened to the temperature inside the bottle as you pumped?

Summarize the relationship between temperature and pressure:

Compare your chart with the relationship between temperature and pressure that we experience in Earth's atmosphere, which is plotted below.



How do the shapes of the plots compare? What does this mean for the relationship between temperature and pressure in the lower level of Earth's atmosphere?

What would Jupiter's lower atmosphere look like if you could travel in a spacecraft to see it? Where would its temperature and pressure be highest? Lowest? **Draw** it here!



Up high, the temperature and pressure are (circle one):

High Low

Deep in the lower atmosphere, temperature and pressure are (circle one):

High Low