



- Pour one mL of ammonia into a small test tube. Using the pH paper determine the pH of this sample of ammonia. Record it on table 2.
- Add one drop of vinegar to the test tube and test the pH. Record the pH in table 2. Continue adding drops of vinegar and testing the pH between each drop **until a pH of seven** is reached. Add another section to table 2 if needed.

Table 2

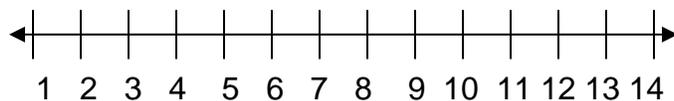
Drops of vinegar added	pH
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	

Drops of vinegar added	pH
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	

- To explore the effect of low pH on milk protein, label two CLEAN test tubes A and B. Pour 2 mL of milk to each tube. Add 6 drops of water one drop at a time, to tube A. After each drop, mix well and note any change. Repeat the procedure with tube B using vinegar instead of water. Record your observations in the space below.

Analysis and conclusions:

- Which of the substances are acidic? Which are basic? Which are neutral?
- On the pH scale below, write the name of each substance you tested at the point along the scale that corresponds to its pH.



More on the back

3. Did the results of the pH paper always agree with the litmus paper? What additional information did the pH paper provide?
  
4. What happened to the pH of the ammonia as acid was added to it? Explain in terms of the chemical reaction that occurred.
  
5. Predict what would happen to the ammonia-vinegar solution if you continued to add acid to the tube?
  
6. In the controlled experiment in step six, what problem was being investigated? What was the experimental variable? Which was the control? What can you conclude from the results?
  
7. In biological systems, pH is maintained within a narrow range. Based on your experience in step six, why is this important to maintain homeostasis?
  
8. On a separate graph paper, graph your results in table 2.