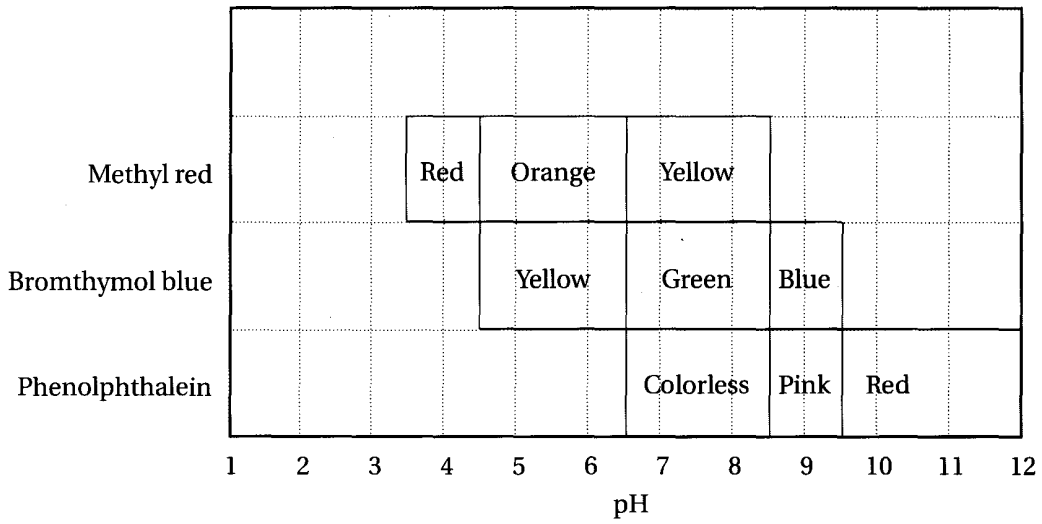
Name _____ Class _____ Date _____

20 INTERPRETING GRAPHICS

USE WITH SECTION 20.2



The chart above shows the color changes and pH ranges for three common acid–base indicators. Use the chart to answer the following questions.

1. Which indicator would be useful to show that the pH of a reaction has changed from 4 to 7?

2. Acid is added to base so that the final pH is 9.0. Which indicator should be used to determine when the pH has been reached?

3. Which pH change could not be detected using any of the three indicators?
   a. pH 1 to pH 4 **b.** pH 6 to pH 9 **c.** pH 8 to pH 10

4. A chemist has made an aqueous solution containing methyl red *and* phenolphthalein. What is the color of the solution at pH 10?
   a. yellow **b.** orange **c.** red **d.** colorless

5. What is the color of the solution in problem 4 at pH 3?
   a. yellow **b.** orange **c.** red **d.** colorless

6. What is the color of the solution in problem 4 at pH 8?
   a. yellow **b.** orange **c.** red **d.** colorless

7. What color is a solution containing bromthylmol blue and phenophthalein at pH 7?
   a. blue **b.** green **c.** purple **d.** colorless