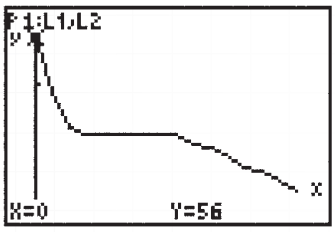
Changes

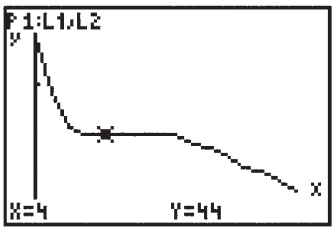
Application: Phase Changes

Two students conduct phase change experiments for a certain chemical using a graphing calculator and probes. One student works on the heating curve of the solid while the other student works on the cooling curve of the liquid. Both students decide to take temperature readings in Celsius every minute for 15 minutes. The two sets of graphs obtained by the students are shown below. Study the graphs carefully and answer the questions below.

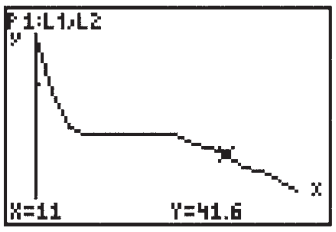
A



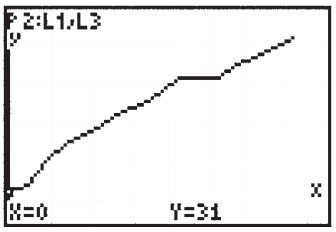
B



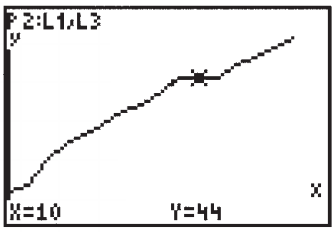
C



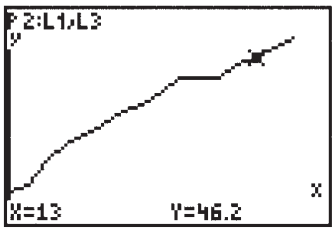
P



Q



R



1. What is the independent variable in the experiment? What is the dependent variable?

2. Which set of graphs represents the heating of the solid? Which set of graphs represents the cooling of the liquid? How do you know?

3. Color or mark the melting point and the freezing point on the respective graphs. What are the melting temperature and the freezing temperature of the substance?