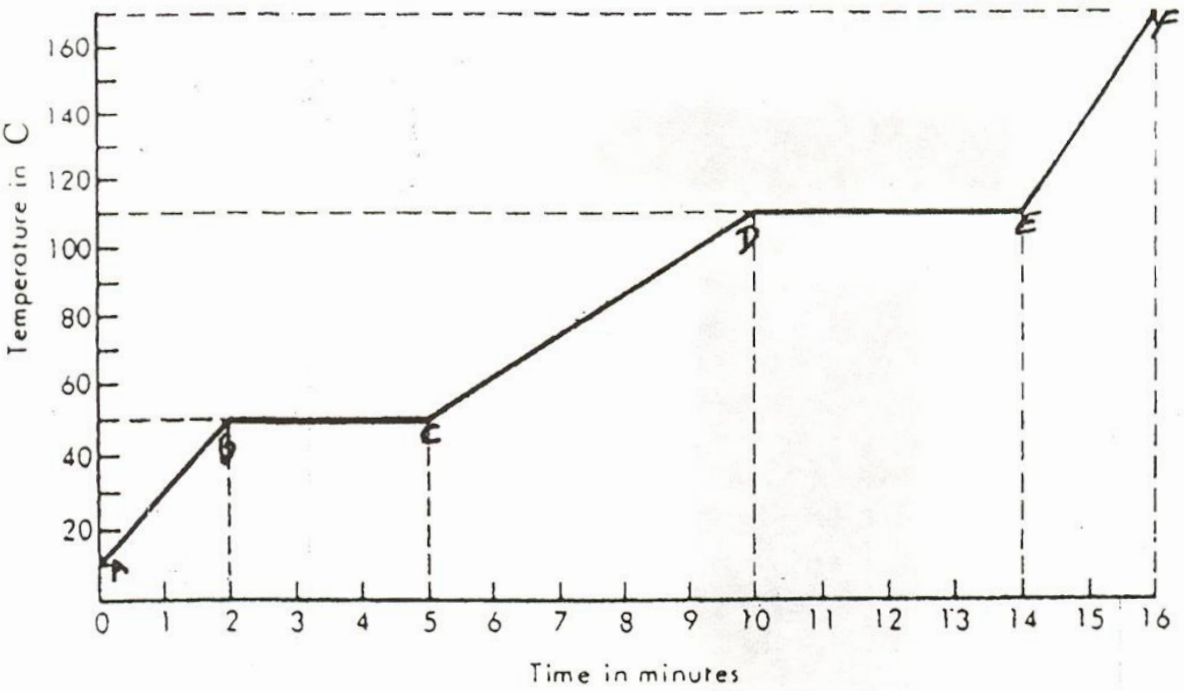
HEATING CURVE HW

Base your answers to Questions 1-**8** on the figure below, which represents the heating of **2.0 grams** of a substance at a uniform **rate** of **500 J/min**.



1) What is the **melting point** of this substance? _____ °C

2) What is the **freezing point** of this substance? _____ °C

3) What is the **boiling point** of this substance? _____ °C

4) Is this substance water? State your reasons.

5) What phase(s) are present in segment **AB**? _____
BC? _____
CD? _____
DE? _____
EF? _____

6a) In what segments of the heating curve was heat used to increase the **average kinetic energy** of the particles in the substance? _____

6b) In what segments of the heating curve was heat used to increase the **potential energy** of the particles in the substance? _____

7) Describe what is happening to *both* the potential energy and the average kinetic energy of the **particles in the** sample described during interval *BC*.
[*Your response must include both potential energy and average kinetic energy.*]

8 a) How many minutes did it take to completely melt this sample at its melting point? _____
b) Using the answer to part (a) and the rate of heating, calculate the joules involved in melting this sample. (SHOW ALL WORK)