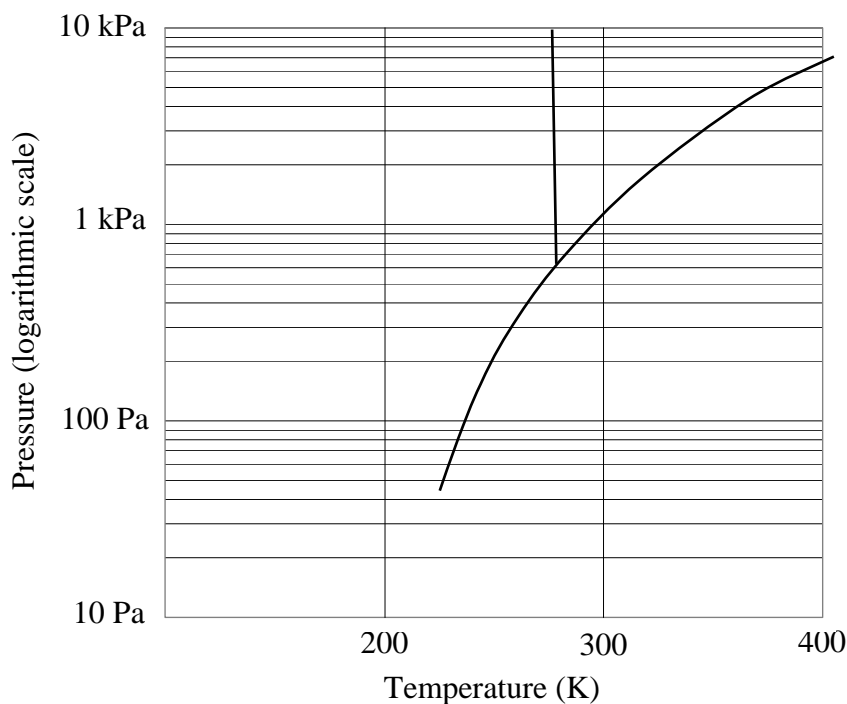


- The diagram below shows part of the phase diagram of water.

Marks
4



The average pressure on the surface of Mars is around 0.6 kPa. If the night time temperature is $-60\text{ }^{\circ}\text{C}$ and a summer day temperature is $20\text{ }^{\circ}\text{C}$, describe what happens to any water on the surface of Mars as the sun rises.

The highest surface pressure on Mars is thought to occur at the Hellas Basin, a low-lying area created by the impact of a large asteroid. If the pressure in this region is 1.2 kPa, use the phase diagram to estimate the temperature range in which liquid water will occur. Show your working on the phase diagram.