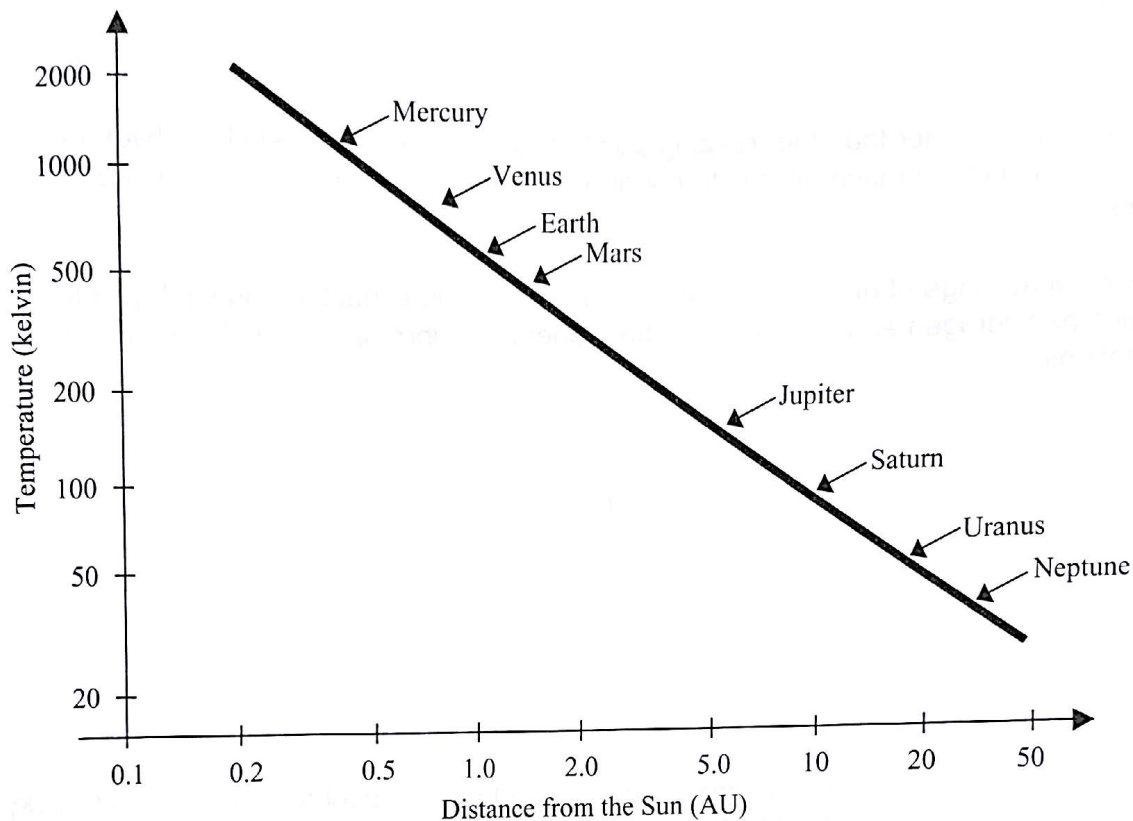


Consider the information provided in the graph and table below. The graph shows the temperature (expressed in kelvins) at different distances from the Sun (expressed in astronomical units or AU) in the solar system during the time when the planets were originally forming. The table provides some common temperatures to use for comparison.



Condition	Temp. Fahrenheit	Temp. Celsius	Temp. kelvin
Severe Earth cold	-100	-73	199
Water freezes	32	0	273
Room temp	72	22	296
Human body	98.6	37	310
Water boils	212	100	373

- 1) What was the temperature at the location of Earth?
- 2) What was the temperature at the location of Mars?
- 3) Which planets formed at temperatures hotter than the boiling point of water?

Temperature and Formation of Our Solar System

- 4) Which planets formed at temperatures cooler than the freezing point of water?

At temperatures hotter than the freezing point of water, light gases, such as hydrogen and helium, likely had too much energy to condense together to form the large, gas giant, Jovian planets.

- 5) Over what range of distances from the Sun would you expect to find light gases, such as hydrogen and helium, collecting together to form a Jovian planet? Explain your reasoning.

- 6) Over what range of distances from the Sun would you expect to find only solid, rocky material collecting together to form a terrestrial planet? Explain your reasoning.

- 7) Is it likely that a large, Jovian planet would have formed at the location of Mercury? Explain your reasoning.