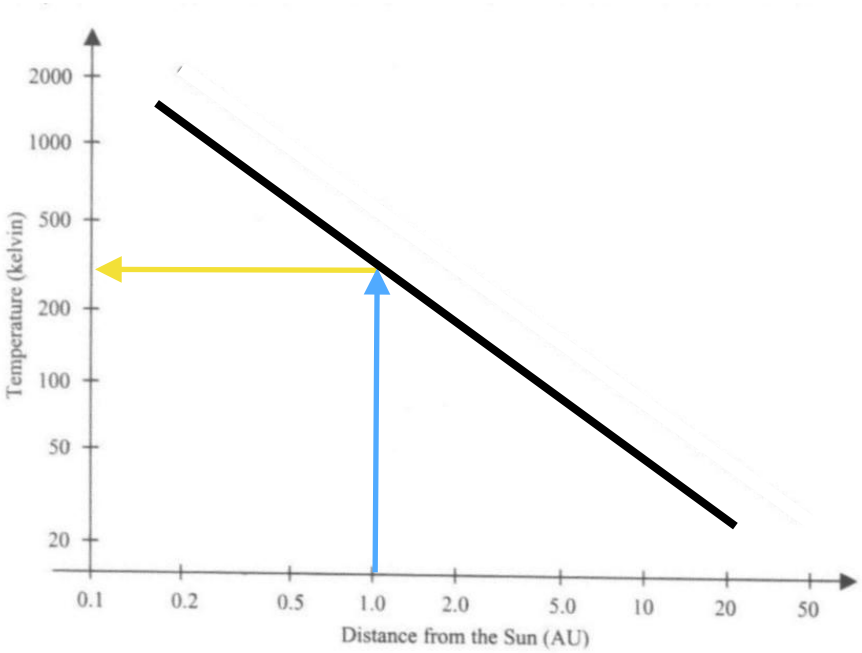
Names _____

ASTRONOMY - IN-CLASS LAB -
THE FORMATION OF THE PLANETS

The graph below shows the temperature in the Solar System as a function of distance from the Sun, during the time when the planets were forming. The table below it lists some common standard temperatures, in different units: degrees Fahrenheit, Celsius and Kelvin. The table below that lists the planets and their distances from the Sun.



Condition	Temp. Fahrenheit	Temp. Celsius	Temp. Kelvin
Severe Earth cold	-100	-73	199
Water freezes	32	0	273
Room temperature	72	22	296
Body temperature	98.6	37	310
Water boils	212	100	373

Fill in the missing expected temperature data for each planet from the graph:

Planet	Planet distance from Sun, in AU's	Expected Temperature of the planet
Mercury	0.39	
Venus	0.79	
Earth	1	
Mars	1.5	
Jupiter	5.2	
Saturn	9.5	
Uranus	19.2	
Neptune	30.1	

1) In what range of distances from the Sun could a planet with liquid water form?

2) Which planets formed at temperatures hotter than the boiling point of water?

3) Which planets formed at temperatures lower than the freezing point of water?

4) If most gases evaporate at temperatures above the freezing point of water, which planets should have no Hydrogen in their atmospheres?

5) Which planets should have lots of gas, especially Hydrogen, in their atmospheres?