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1.)

a.) Mass Density is simply density. It is the amount of mass or amount of material present

in a given volume. In this case, what is being referred to is the density of the metal plate.

b.) Specific heat is the amount of heat energy required to raise the temperature of a particular

material in relation to its mass. In the case of the problem, it would take 900 joules to raise

the temperature of 1 kg of the plate by 1 kelvin.

c.) Radiative emissivity is the measure of effectiveness of an object to release its energy through

radiation. In the problem, we are concerned with the amount of heat being emitted to the surroundings.

d.) The Stefan-Boltzmann constant is the proportion between the temperature and the amount of energy

being released. This covers the release of energy through other wavelengths.

e.) Josef Stefan is a Austrian physicist who is best known for Stefan's Law which relates the total

radiation emitted by an object to its temperature. Ludwig Boltzmann is his student and together

they were able to extend the law to include other types of objects, thus creating the Stefan-Boltzmann

law.

f.) The symbol for T\_infinity is a good symbol since as time goes on, the temperature of the plate

should eventually reach ambient temperature.

2-3.) The graph generated using RK4 and euler does look similar to the given graph, however the downward slope does not seem to be as steep. (To the left, Yao’s Euler, to the right, Besas’ RK4, graphed using octave)

