READ ME:

For the Heat Transfer Model Solution and Initial Condition Formulation, please refer to the scanned documents.
For each of surface, contour, streamline and arrow, two plots at t=0 and t=1 were provided to illustrate its initial state and steady state.
The approximation is made within a reasonable tolerance as it has been set to be smaller than 0.1% the absolute maximum value in the expression, as shown in the surface plot. For example, for a material with peak temperature at 100 Celsius, a 0.1 Celsius error will likely not have any significant consequence.

Note: 1. It may take more than 1 min to run certain plot codes.
2. The scaled final equation has a negative minimum value, as it does not make much sense to have negative temperature in a heat transfer problem; I took the liberty to time the whole expression by -1 to ensure all surface plots have a positive maximum temperature value which proceeds to steady state as time progresses.

Surface vs Contour: I personally find surface plot easier to interpret than contour plot as for the following reasons:
1. The surface plot is in 3D, which make it easier to visualize temperature change compared to a 2D contour plot which does not show height.
2. In a contour plot, the curvature signifies the temperature gradient, which straightens out as time progresses. Therefore, contour plot is less intuitive to interpret.
2. A contour plot can depict slope and size of different temperature region on map

Streamline vs Arrow:
1. Streamline is a curve at a particular point in time such that it is tangent at every point to a vector of constant velocity in a flow scenario. Streamline excels at visualizing heat flow. By removing the magnitude of the vector, flow structure can be easily understood.
2. Arrow plot provides the magnitude of the heat flux, but the image is has a less continuous flow compared to streamline, making it hard to follow.