Using JMP Regression for Heat Transfer Modeling

This assignment is based on completing the **JMP_Solid_Product_Cooling.pdf** step-by-step tutorial. The tutorial uses cooling data in **consumer_solid.jmp**.

1. **Follow the tutorial to plot Temperature [C] versus time [seconds] color-coded by the Process variable.**
   - Which Process has faster cooling? Lab or Plant?
   - Attach a screen picture of your graph

2. **Add calculated columns for dimensionless temperature, Theta and -ln(Theta)**
3. **Plot -ln(Theta) versus time [seconds] and fit lines for Process=”Lab” and “Plant (exclude initial points and use Group By per the tutorial)**

   - How many initial points did you exclude for times prior to steady state cooling? (OK to exercise some judgement on this)
   - Attach a screen picture of your plot including the Summary of Fit statistics (it’s ok to collapse the other sections)
   - What are the Rsquare values for the two linear fits (Lab and Plant)?
   - What are the slope values [s-1] for the two linear fits?

Process	RSquare	Slope (s^{-1})
Lab		
Plant		

4. **Based on your linear fits, calculate and report the cooling time constants, τ_c in seconds, for the Lab and Plant process**

Process	τ_c (s)
Lab	
Plant	