PROJECT DEADLINE: 5/31/24

Goal/Plan	Status	Deadline
Gather equations and finalize calculation approaches	In progress	5/17/24
Code functions for minimizing cost	Not started	5/24/24
Write report and finalize results	Not started	5/29/24
Turn in	Not started	5/30/24

OBJECTIVE:

You are an engineer working in a company that plans to manufacture 100-mm by 50-mm thin rectangular (*surface area of bare surface*) electronic devices. The top surface of the electronic device is to be made of aluminum and attached with an array of aluminum pin fins. The electronic device generates 50 W (**q**) of heat that has to be dissipated through the fins. To prevent the electronic device from overheating the top surface temperature should be kept below 85 ˚C ($\mathbf{T_0}$) in an ambient surrounding of 30 ˚C ($\mathbf{T_\infty}$) with film heat transfer coefficients of 15 W/m^2 ˚C (**h**). Assuming a square array (even distribution; not staggered), determine suitable combinations of fins, fin spacing and fin dimension (diameter and length) to accomplish this cooling at minimum weight/cost of aluminum. Assume a uniform value of h for both the fin and wall surface.

GOAL:

Minimize the cost while maintaining the temperature at 85 ˚C
(Done by minimizing the dimensions and/or the number of fins needed)