

Task 1

Considering the same example you solved in the previous assignment (radiative heat transfer between two parallel plates), how many shields with epsilon = 0.1 should you add in order to have the new heat transfer rate to be 1% of the case without shields ?

$$\dot{Q}_{N \text{ shields}} = \frac{A\sigma(T_1^4 - T_2^4)}{(N+1)\left(\frac{1}{\epsilon} + \frac{1}{\epsilon} - 1\right)} = \frac{1}{N+1} \dot{Q}_{no \text{ shields}}$$

$$\dot{Q}_{N \text{ shields}} = \frac{1}{N+1} \dot{Q}_{no \text{ shields}}$$

$$N = 1 * \left(\frac{\dot{Q}_{N \text{ shields}}}{\dot{Q}_{no \text{ shields}}} \right) - 1$$

$$N = 1 * \left(\frac{100\%}{1\%} \right) - 1$$

$$N = 100 - 1 \quad N = 99$$

Task 2

You should create a pdf file with screenshots of all of the steps we went through (clearly from your own file) and explain briefly the reason behind the use of each step



