ChatGPT  
To address the provided chemical engineering problem set, we'll need to create MATLAB code for two  
main tasks:  
Linear Model Fitting for Heat Exchangers: This involves fitting a linear model to the provided data for  
the costs of fabrication of heat exchangers, where the cost model is defined as C = a1 + a2N +  
a3A, with C being the labor cost, N the number of tubes, and A the shell surface area.  
Best Model Identification for Given Data: This involves identifying which model best represents the  
relationship between Y and X from three given models, using the provided X and Y₁ data points.  
Let's start with the MATLAB code for the first problem.  
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Problem 1: Linear Model Fitting for Heat Exchangers  
The MATLAB code will use linear regression to fit the model. We'll employ the 'fitlm` function for a  
straightforward approach. Here's an example of how you might structure your MATLAB code: