

Moonbeam Appliance Corporation
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Noer, Iowa 56478

Independent Mathematical Contractors
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Dear IMC:

The Moonbeam Appliance Company started production of our new Turbo Blender during this quarter. This blender features titanium cutting blades and an incredibly powerful motor that allows it to demolish any food product placed in it. We have experimented with various production levels at our Madison, Wisconsin manufacturing plant and developed the following table of marginal costs.

Blenders per Day	200	300	400	500	600	700	800
Marginal Cost (\$ per Blender)	28.34	24.29	21.41	19.18	17.36	15.82	14.50

As you would expect, the more blenders we make the lower our costs are to produce one additional blender. This is due to the efficiencies surrounding the cost of materials and other costs.

We are interested in using this data to determine the total cost to increase production from one level to another level. We would like you to develop a strategy to find this cost which we can apply to any pair of production levels.

As a specific example of this strategy, we would like you to estimate the total cost of increasing production from 200 blenders per day to $750 + L$ blenders per day, where L is the total number of letters in your first and last name. This specific example should help you to focus on the problem. However, keep in mind that your solution strategy should be robust enough to allow us to calculate the total cost involved in increasing production between any two production levels using the strategy you document.

Please communicate your strategy to us in a technical memo. In this document you should explain what the problem is and any assumptions and data you used. Explain the strategy you used along with any variables, procedures and terms. Carry out this strategy on the specific production levels given to you in the paragraph above. A scientific expert (your instructor) is available to answer any questions that you might have in the course of your investigations. This expert will not be available to assist on this project over the weekend before it is due. You should plan on consulting with this expert as soon as possible if you are unclear on any of the requirements of this project.

Nell Armstrong
Vice President for Product Development