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## Meridian Water Pumps

John Lopez, president of Meridian Water Pumps (a small water pump producer), was holding a meeting with his department managers. They were in the process of planning production of medium-sized pumps for the next six months. Mr. Lopez tolerated some of the arguments before he felt it necessary to stop the discussion as it was going so that he could direct it toward a solution. A summary of some of the arguments follows:

Mary Welch, marketing and sales manager: "My sales people are very good, but get very frustrated at times. Several times last year the sales people spent lots of their time trying to calm down frustrated customers. As they are supposed to do, the sales people sold as many of these pumps as they could, yet at times the production could not keep up with the orders. Production knows that we have some cyclical demand, but we have plenty of machine capacity. They should be able to hire people so that we can meet the demand that we sell. Why can't they get their area to work correctly?"

Frank Jackson, production manager: "Come on, Mary, we know the sales are cyclical, but we never know exactly when the cycles happen. Even if we did, the Human Resource (HR) people always take too long to get us the people we need. By the time we get the new people hired and trained, the sales seem to drop again. What am I supposed to do? If we keep them and allow them to keep producing pumps, our inventory climbs and the finance people start yelling. I can't just let those new people sit around doing nothing. The only other alternative is to lay them off, but then the HR people get really angry."

Elizabeth Conrad, human resource manager: "You bet we get angry. The production people will occasionally start pushing us to hurry and hire more people, yet get very impatient. It takes time to go through the interview process and get people hired and oriented to our business. Then we no sooner get them on site and working when production asks us to lay them off. That is a real problem for two reasons. First, there are costs involved. It takes an average of \$100 to get a person hired, and another \$100 to lay them off. Second, those people that we hire and then quickly lay off tend to not return. I can't blame them, since from their perspective it looks like we have no idea how to run our business. In addition, as those people complain to other people about our treatment of them, our reputation is getting to look bad, and that makes it increasingly difficult to find good people to hire."

Joseph Western, finance manager: "Frank is correct that I get upset when the inventory climbs. It costs us about \$5 to keep one of these pumps in our inventory for a month. That cost comes right out of our profit. Since my job is to maximize profitability, I can't sit by and let those inventory dollars shrink that profitability. The same goes for all that hiring and layoffs. That money also hurts profitability. Can't we do better?"

At this point Mr. Lopez stopped the discussion and said "Enough of trying to blame each other. It is our job as managers to manage this process more effectively. I have just completed a 6-month forecast of anticipated demand for this family of pumps. We know from past history that their forecasts are pretty good. We should be able to come up with an approach that we all can live with and focus our efforts to meet the demand and work on it."

### Assignment

Assume you have been given the job to develop an effective approach to meet the demand. First, here is the forecast developed by marketing:

Month	1	2	3	4	5
Forecasted Demand	600	750	1000	850	750

The production manager said there were currently 50 units in inventory. He would like to end the six months with only 25 in inventory. He also said that each worker produces an average of 25 pumps in any given month. There are 20 workers in the medium-size pump area.

1. Using the data, develop a level production plan. How much extra cost (inventory and HR costs) are involved in this plan? What additional costs (both financial and non-financial) might be involved with such a plan?
2. Using the data, develop a chase production plan. How much extra cost (inventory and HR costs) are involved in this plan? What additional costs (both financial and non-financial) might be involved with such a plan?
3. Try to develop a possible hybrid plan that would accomplish the task with the lowest total costs than either level or chase.
4. Based on your work, what would you recommend and why? What are the pros and cons of the solution you recommend?





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