Model Optimized for Cost Reduction

Implement your formulation into Excel and be sure to make it neat. This section should include:

		1	2	3	4		
Beginning Inventory		500	0	0	0		
Units Produced		468	478	593	487		
Units Demanded		592	594	701	565		
Ending Inventory		376	-116	-108	-78		
		187,593	191,602	237,698	195,209		
Maximum Production		**468**	**478**	**593**	**487**		
Minimum Inventory		59	59	70	56		
		0	0	0	0		
Average Inventory		438	-58	-54	-39		
Unit Production Cost		**$240**	**$250**	**$265**	**$285**		
Unit Carrying Cost	**1.54%**	$3.70	$3.85	$4.08	$4.39		
Monthly Production Cost		$112,320	$119,500	$157,145	$138,795		
Monthly Carrying Cost		$1,619	-$223	-$220	-$171		
						Total Cost	**$528,764**

Text Explanation:

1. **Production Adjustment** – The model suggests producing enough units each quarter to meet demand while keeping inventory levels stable. This prevents unnecessary storage costs.

2. **Cost Efficiency** – It minimizes total costs by balancing **production, carrying costs, and stock levels**.

3. **Inventory Management** – The model ensures that inventory does not go negative (avoiding unmet demand) and stays within safe limits.

4. **Decision Support** – If demand is higher than expected, the model recommends **increasing production** or using available inventory. If demand drops, it suggests reducing production to avoid high carrying costs.