Solutions to Homework 1 (2024):

1. Answers to Question 1 [total 5 points]

Cost of Goods Manufactured & COGS

a. Schedule of Cost of Goods Manufactured

Direct materials:		
Beginning raw materials inventory	$12,000	
Add: Purchases of raw materials	43,000	
Total raw materials available	55,000	
Deduct: Ending raw materials inventory	16,000	
Raw materials used in production	39,000	
Deduct: Indirect materials included in manufacturing overhead	8,500	$30,500
Direct labor		58,000
Manufacturing overhead cost applied to work in process		99,000
Total manufacturing costs		187,500
Add: Beginning work in process inventory		48,000
		235,500
Deduct: Ending work in process inventory		53,000
Cost of goods manufactured		**$182,500**

b. Schedule of Cost of Goods Sold

Beginning finished goods inventory	$41,000
Add: Cost of goods manufactured	**182,500**
Cost of goods available for sale	223,500
Deduct: Ending finished goods inventory	47,000
cost of goods sold	**176,500**

Question 2

1. We can recast AgroPharm's income statement to emphasize contribution margin, and then use it to compute the required CVP parameters.

AgroPharm Corporation
Income Statement for the Year Ended December 31, 2020

	Using Sales Agents		Using Own Sales Force	
Revenues		$45,000,000		$45,000,000
Variable Costs				
Cost of goods sold − variable	$15,750,000		$15,750,000	
Marketing commissions	8,100,000	23,850,000	5,400,000	21,150,000
Contribution margin		$21,150,000		$23,850,000
Fixed costs				
Cost of goods sold − fixed	$5,425,000		$5,425,000	
Marketing fixed	5,250,000	10,675,000	7,950,000	13,375,000
Operating income		$10,475,000		$10,475,000
Contribution margin ratio ($21,150,000÷$45,000,000; $23,850,000÷$45,000,000)		**47.00%**		**53.00%**

Breakeven revenues

($10,675,000 ÷ 0.47; $13,375,000 ÷ 0.53)	**$22,712,766**	**$25,235,849**
Degree of operating leverage		
($21,150,000 ÷ $10,475,000; $23,850,000 ÷ $10,475,000)	**2.02**	**2.28**