Problem 12-24 (60 minutes)

1.

	Total Company	Sales Territory Northern	Sales Territory Southern
Sales	$750,000	$300,000	$450,000
Variable expenses	336,000	156,000	180,000
Contribution margin	414,000	144,000	270,000
Traceable fixed expenses	228,000	120,000	108,000
Sales territory segment margin	186,000	$ 24,000	$162,000
Common fixed expenses not traceable to sales territories ($378,000 – $228,000 = $150,000)	150,000		
Net operating income	$ 36,000		

	Northern Territory	Product Line Paks	Product Line Tibs
Sales	$300,000	$50,000	$250,000
Variable expenses	156,000	11,000	145,000
Contribution margin	144,000	39,000	105,000
Traceable fixed expenses	70,000	30,000	40,000
Product line segment margin	74,000	$ 9,000	$ 65,000
Common fixed expenses not traceable to product lines ($120,000 – $70,000 = $50,000)	50,000		
Sales territory segment margin	$ 24,000		

Problem 12-24 (continued)

	Total Company	*Sales Territory*	
		Northern	*Southern*
Sales	100.0%	100%	100%
Variable expenses	44.8%	52%	40%
Contribution margin	55.2%	48%	60%
Traceable fixed expenses	30.4%	40%	24%
Sales territory segment margin	24.8%	8%	36%
Common fixed expenses not traceable to sales territories ($378,000 – $228,000 = $150,000)	20.0%		
Net operating income	4.8%		

	Northern Territory	*Product Line*	
		Paks	*Tibs*
Sales	100.0%	100%	100%
Variable expenses	52.0%	22%	58%
Contribution margin	48.0%	78%	42%
Traceable fixed expenses	23.3%	60%	16%
Product line segment margin	24.7%	18%	26%
Common fixed expenses not traceable to product lines ($120,000 – $70,000 = $50,000)	16.7%		
Sales territory segment margin	8.0%		

Problem 12-24 (continued)

2. Two insights should be brought to the attention of management. First, compared to the Southern territory, the Northern territory has a low contribution margin ratio. Second, the Northern territory has high traceable fixed expenses. Overall, compared to the Southern territory, the Northern territory is very weak.

3. Again, two insights should be brought to the attention of management. First, the Northern territory has a poor sales mix. Note that the territory sells very little of the Paks product, which has a high contribution margin ratio. This poor sales mix accounts for the low overall contribution margin ratio in the Northern territory mentioned in part (2) above. Second, the traceable fixed expenses of the Paks product seem very high in relation to sales. These high fixed expenses may simply mean that the Paks product is highly leveraged; if so, then an increase in sales of this product line would greatly enhance profits in the Northern territory and in the company as a whole.