

Problem 12-23 (60 minutes)

1. Segments defined as product lines:

		<i>Product Line</i>		
	<i>Glass Division</i>	<i>Flat Glass</i>	<i>Auto Glass</i>	<i>Specialty Glass</i>
Sales	R600,000	R200,000	R300,000	R100,000
Variable expenses	<u>300,000</u>	<u>130,000</u>	<u>120,000</u>	<u>50,000</u>
Contribution margin	<u>300,000</u>	<u>70,000</u>	<u>180,000</u>	<u>50,000</u>
Traceable fixed expenses:				
Advertising	120,000	30,000	42,000	48,000
Depreciation	48,000	10,000	24,000	14,000
Administration	<u>42,000</u>	<u>14,000</u>	<u>21,000</u>	<u>7,000</u>
Total	<u>210,000</u>	<u>54,000</u>	<u>87,000</u>	<u>69,000</u>
Product line segment margin	90,000	<u>R 16,000</u>	<u>R 93,000</u>	<u>R (19,000)</u>
Common fixed expenses not traceable to product lines:				
Administration	<u>60,000</u>			
Divisional segment margin.	<u>R 30,000</u>			

Problem 12-23 (continued)

2. Segments defined as markets for Specialty Glass:

		<i>Sales Market</i>	
	<i>Specialty Glass</i>	<i>Domestic</i>	<i>Foreign</i>
Sales	R100,000	R60,000	R 40,000
Variable expenses	<u>50,000</u>	<u>30,000</u>	<u>20,000</u>
Contribution margin	50,000	30,000	20,000
Traceable fixed expenses:			
Advertising	<u>48,000</u>	<u>18,000</u>	<u>30,000</u>
Market segment margin.....	<u>2,000</u>	<u>R12,000</u>	<u>R(10,000)</u>
Common fixed expenses not traceable to sales markets:			
Depreciation	14,000		
Administration.....	<u>7,000</u>		
Total.....	<u>21,000</u>		
Product line segment margin	<u>R (19,000)</u>		

3.	<i>Flat Glass</i>	<i>Auto Glass</i>
Increased sales	R40,000	R30,000
Contribution margin ratio:		
Flat glass (R70,000/R200,000)	<u>× 35%</u>	
Auto glass (R180,000/R300,000)		<u>× 60%</u>
Incremental contribution margin	R14,000	R18,000
Less cost of the promotional campaign	<u>8,000</u>	<u>8,000</u>
Increased net operating income	<u>R 6,000</u>	<u>R10,000</u>

Based on these data, the campaign should be directed toward Auto Glass. Note that the analysis uses the contribution margin ratio rather than the segment margin ratio.