M15.8.

a.

DuPont Performance Analysis:	*Division 1*	*Division 2*
Revenues…………………………………..	$120,000	$ 80,000
Operating Income…………………………	$ 36,000	$ 40,000
Operating Assets……………………………	$300,000	$400,000
Margin (Operating income / Sales)...………	30%	50%
Turnover (Sales / Operating assets)………...	0.4 turns	0.2 turns
ROI (Operating income / Operating asset)… or (Margin x Turnover)	12%	10%

Residual Income Analysis:		
Operating Income………………………..…	$36,000	$40,000
Required ROI (Operating assets x 10%)…...	30,000	40,000
Residual Income……………………………	$ 6,000	$ 0

E15.17.

a. The president's remark ignores the misleading result of arbitrarily allocated fixed expenses.

b.

Current net income of company ………………..……………		$10,000
Less: Lost contribution margin of Division B ……………..		(10,000)
Add: Division B direct fixed expenses that would be eliminated:		
Total Division B fixed expenses per report ……….………	$11,000	
Less: Allocated corporate ($21,000 / 3 divisions) ………..	(7,000)	4,000
Company net income without Division B……………………		**$ 4,000**

c. Never arbitrarily allocate fixed expenses!

E15.20.

a.

DuPont Performance Analysis:	*Division X*	*Division Y*	*Division Z*
Revenues…………………………………..	$ 750,000	$ **225,000**	**$ 937,500**
Operating Income…………………………..	$ 90,000	**$ 27,000**	$ 75,000
Operating Assets……………………………	$ 375,000	$ 225,000	**$ 468,750**
Margin (Operating income / Sales)...………	**12%**	12%	**8%**
Turnover (Sales / Operating assets)………..	**2 turns**	1 turn	2 turns
ROI (Operating income / Operating asset)… or (Margin x Turnover)	**24%**	**12%**	**16%**

Residual Income Analysis:			
Operating Income………………………..…	$ 90,000	**$ 27,000**	$ 75,000
Required ROI (Operating assets x 12%)….	45,000	27,000	**56,250**
Residual Income……………………………	**$ 45,000**	**$ 0**	$ 18,750

E15.20. ***(continued)***

b. The DuPont model provides an excellent basis of comparison between the three divisions and illustrates the importance of managing both profit margin and turnover. Division X combines the best margin and turnover to yield an ROI of 24%. Division Y is generating the same margin as Division X but falls short on the turnover measure. Division Z achieves the same turnover as Division X but falls short on the margin measure. By looking at margin and turnover as components of ROI, the managers of these divisions can focus their attention on improving their shortcomings. Also note that Division Y is only generating the minimum required ROI as evidenced by its $0 residual income.

c. If Division X were presented with an opportunity to bring on a new product line that would generate an ROI of 18%, the manager would not invest in the product line if his performance were being evaluated by ROI. With residual income, the manager will be pleased to add a product line that earns 18% because any return over the 12% minimum requirement will improve his or her division's residual income.