

## Workshop Lecture 4 Solution

### 1. Brace plc

ROI:		Division A	Division B
Net profit	$\$44.6\text{m} \times 28\%$	$= \$12.488\text{m}$	$\$21.8\text{m} \times 33\% = \$7.194\text{m}$
ROI	$\$12.488\text{m}/\$82.8\text{m}$	$= 15.08\%$	$\$7.194\text{m}/\$40.6\text{m} = 17.72\%$
Residual income:			
Capital employed		$= \$82.8\text{m}$	$= \$40.6\text{m}$
Imputed interest charge	$\$82.8\text{m} \times 12\% = 9.936\text{m}$		$\$40.6\text{m} \times 12\% = \$4.872\text{m}$
Residual income	$\$12.488\text{m} - \$9.936\text{m} = \$2.552\text{m}$		$\$7.194 - \$4.872 = \$2.322\text{m}$

**Comments** If a decision about whether to proceed with the investments is made based on ROI, it is possible that the manager of Division A will reject the proposal whereas the manager of Division B will accept the proposal. This is because each division currently has a ROI of 16% and since the Division A investment only has a ROI of 15.08%, it would bring the division's overall ROI down to less than its current level. On the other hand, since the Division B investment is higher than its current 16%, the investment would bring the division's overall ROI up.

When you consider what would actually be best for the company as a whole, you come to the conclusion that, since both investments have a healthy return, they should both be accepted. Hence, the fact that ROI had been used as a decision-making tool has led to a lack of goal congruence between Division A and the company as whole. This backs up what the new manager of Division A is saying. If they used residual income in order to aid the decision-making process, both proposals would be accepted by the divisions since both have a healthy RI. In this case, RI helps the divisions to make decisions that are in line with the best interests of the company. Once again, this backs up the new manager's viewpoint.

It is important to note, however, that each of the methods has numerous advantages and disadvantages that have not been considered here.