

## Quiz 1 Solutions

1(a)

Both the ROE and its breakdown require you to compare income statement items to balance sheet items. It is acceptable to do this either by using beginning of period balance sheet values or by using the average of beginning and ending period balance sheet values. The solutions below are based on beginning balance sheet values.

$$ROE = \frac{NetIncome}{Equity} = \left( \frac{NetIncome}{Sales} \right) \left( \frac{Sales}{Assets} \right) \left( \frac{Assets}{Equity} \right)$$
$$= \frac{291}{822} = \left( \frac{291}{1102} \right) \left( \frac{1102}{2308} \right) \left( \frac{2308}{822} \right) = (26.41\%) (47.75\%) (2.808) = 35.40\%$$

1(b).

Firm B has higher profitability (net profit margin) and higher efficiency (asset turnover). Firm A uses higher leverage.

2.

$$PV_{of\ Growth\ Stage} = 650(1.06) \left( \frac{1 - \left( \frac{1.06}{1.09} \right)^6}{0.09 - 0.06} \right) = 3,541.08$$

$$Terminal\ Value_8 = \frac{650(1.06)^6(1.0)}{(0.09 - 0.0)} = \frac{922.04}{0.09} = \$10,244.86m$$

$$PV\ of\ Terminal\ Value = \frac{10,244.86}{(1.09)^6} = \$6,108.68m$$

$$Firm\ Value = 3541.08 + 6108.68 = \$9,649.76$$