

***Coursera, Foundations of Management Specialization***

**Operational Finance: Building a Robust Business**

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**Week 4 Quiz Part I SOLUTIONS**

- 1) Gross Margin in Sales – COGS, in 2009 =  $35,955 - 29,483 =$  **6,472**
- 2) Bad Debts will be 2% of sales, thus  $35,955 * 0.02 =$  **719**
- 3) Operating profit = Gross Margin - Bad Debt - Overhead - Depreciation  
 where  
 Gross Margin = 6,472  
 Bad Debts = 719  
 Overhead = 14% of sales =  $0.14 * 35,955 = 5,034$   
 Depreciation = 10% of last year Net Fixed Assets =  $0.1 * 6,300 = 630$   
 OPERATING PROFIT =  $6,472 - 719 - 5,034 - 630 =$  **89**
- 4) Interest expense is 6% of the sum of short-term and long-term debt with the bank at the end of 2008  
 Interest Expense =  $0.06 * (18,951 + 3,400) =$  **1,341**
- 5) Net Income for Dec 2009 = EBIT - Taxes  
 EBIT = Operating Profit - Interest Expense =  $89 - 1,341 = -1,252$   
 Taxes =  $0.3 * \text{EBIT} = 0.3 * (-1,252) = -376$   
 Net Income =  $-1,252 - (-376) =$  **-876**
- 6) Given that the forecast of days of collection is 150, and Days of Collection = REC / Daily sales  
 REC = Daily Sales \* Days of collection =  $(35,955/360) * 150 =$  **14,981**
- 7) Given that the forecast of days of inventory is 170, and Days of Inventory = INV / Daily COGS  
 INV = Daily COGS \* Days of Inventory =  $(29,483/360) * 170 =$  **13,923**
- 8) Given that the forecast of days of payable is 90, and Days of Payable = PAY / Daily Purchases  
 PAY = Daily Purchases \* Days of Payable =  $(29,483/360) * 90 =$  **7,371**
- 9) Equity + Reserves in Dec 2009 = Equity + Reserves in 2008 + NI of 2008 (see table)  
 Equity + Reserves =  $9,940 + 265 =$  **10,205**
- 10) Credit needed will be NFO - WC = (Minimum Cash + REC + INV - PAY - Taxes Due) - (LTD + E - FA)  
 Minimum cash = 1,000

$$\text{LTD} = 5,000$$

$$\text{E} = 10,205 + (-876) = 9,329$$

$$\text{FA} = 6,300 \text{ (because we invest as much as depreciation, so stays constant)}$$

$$\text{NFO} = 1,000 + 14,981 + 13,923 - 6,576 - (-376) = 23,703$$

$$\text{WC} = 5,000 + 9,329 - 6,300 = 8,029$$

$$\text{Credit needed} = \text{NFO} - \text{WC} = 23,703 - 8,029 =$$

15,674