***INSTRUCTIONS: Put the names for each group (remember MAXIMUM 3 students per group)***

***COMPLETE and SUBMIT THE SOLUTION SHEET FROM EACH MEMBER of the GROUP***

***20% of Final Mark***

|  |  |  |
| --- | --- | --- |
| ***SOLUTION SHEET*** | ***GROUP:*** | ***NAMES*** |
|  | ***1.*** | **Xiaoyu Wen** |
|  | ***2.*** | **Wanyue Cao** |
|  | ***3.*** |  |

***SOLUTION SHEET – PROBLEM 1***

1. **Ratios**

|  |  |  |  |
| --- | --- | --- | --- |
| **Ratio analysis** | **Ryan** | **Industry** | **Evaluation** |
| Profit margin | 4.24% | 5.75% | worse |
| Return on assets | 3.65% | 6.90% | worse |
| Return on equity | 10.31% | 9.20% | better |
| Receivable turnover | 2.33x | 4.35 × | worse |
| Inventory turnover | 7.00x | 6.5 × | better |
| Capital asset turnover | 1.75x | 1.85 × | worse |
| Total asset turnover | 0.86x | 1.20 × | worse |
| Current ratio | 1.50x | 1.45 × | better |
| Quick ratio | 1.14x | 1.10 × | better |
| Debt to total assets | 64.58% | 25.05% | worse |
| Interest coverage | 2.80x | 5.35 × | worse |
| Fixed charge coverage | 1.74x | 4.62 × | worse |

*Weak points:*

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| Most of profitability ratio performs worse except ROE, the ability of the company to make profit is lower than the industry average. The company may have a higher cost and lower sales.  All debt utilization ratio perform worst. The company has much more debt or fixed charges than industry average.  For asset utilization, the return on assets, receivable turnover, capital asset turnover and total asset turnover performer worse than the industry which indicate that this company did not manage its asset well. |

*Strong points:*

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| In asset utilization category, only the inventory turnover performs better than the industry which indicates that the company may hold more inventory than its competitors.  All liquidity ratio performs well. The company has enough current assets to pay for its current debt. |

Your comment:

*What you think:*

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| The company needs to sell more units and lower its cost in order to get more income. Also, the company may hold more asset and less debt to make sure its daily operation. |

1. **Break-even in sales**

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| --- | --- |
| Break-even sales = | 5250000 |

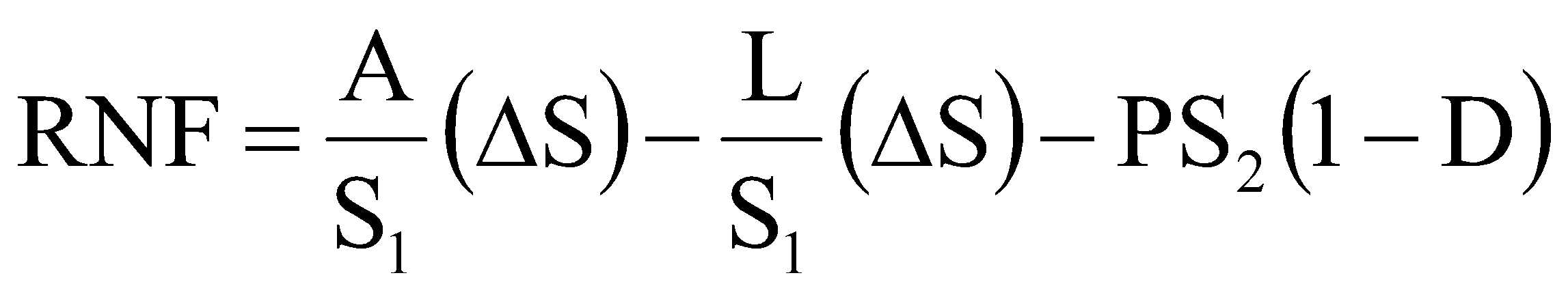
|  |  |  |
| --- | --- | --- |
| DOL = | 4 | times |

|  |  |  |
| --- | --- | --- |
| DFL = | 1.56 | times |

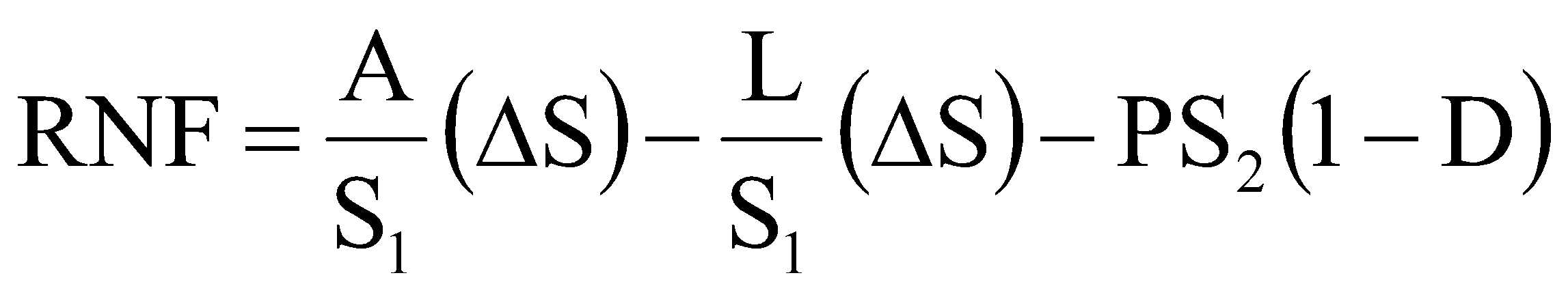
|  |  |  |
| --- | --- | --- |
| DCL = | 6.22 | times |

1. ***Risk Analysis:***

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| As we can see, the company performs well in liquidity ratio which means it has the ability to pay for the short-term debt. However, the company performs worst in asset and debt utilization. If the bank still loans to this company in this situation, the company may do not have enough money to pay for its debt.  Therefore, loaning to Ryan Boot, the bank needs to take a lot of risks. Unless the company can increase the ability of making profit to balance its assets and debts, the bank may accept to loan funds to Ryan Boot. |

1. 

|  |
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| * A=4130000 * L=2200000+150000=2350000 * S1=7,000,000 * S2=7000000\*1.2 =8400000 * △S=1400000 * P=4.24% * D=Total dividends/ NI=118800/297000=40%     =[（4130000/7000000）\*1400000] - [（2350000/7,000,000）\*1400000]-4.24%\*8400000)  \*(1-40%)  =826000-470000-213696  =142304 |

1.  when the company brings its ratios into line with the industry average of 20XY

|  |
| --- |
| Receivable turnover=4.35, A/R=Sales/Receivable turnover=7000000/4.35=1609195  Inventory turnover=6.5 , inventory= sales/ inventory turnover=7,000,000/6.5=1076923  Profit Margin=Net income/ Sales=297000/7000000=5.75%   * A= New Assets=1609195+1076923+50000+80000=2816118 * L=2200000+150000=2350000 * S1=7,000,000 * S2=7000000\*1.2 =8400000 * △S=1400000 * P=5.75% * D=Total dividends/ NI=118800/297000=40%     =2816118/7000000\*1400000- 2350000/7,000,000\*1400000-5.75%\*8400000  \*(1-40%)  =563223-470000-289800  =-196577 |

1. ***Comment:***

(1)

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| If the company is at full capacity, the RNF will increase since the assets under this case is higher than the company is not at full capacity. |

(2)

|  |
| --- |
| If the dividend payout ratio is raised, the RNF will increase which means the company needs more funds to pay the increase part of dividends, therefore the lower RE leads to higher RNF. |

(3)

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| If sales decrease, RNF will decrease because company need less asset to support sales growth. |

***SOLUTION SHEET – PROBLEM 2***

***(Ratio analysis and pro formas)***

|  |  |  |  |
| --- | --- | --- | --- |
| **Industry Averages** | | **Ratios** | **Evaluation** |
| Profit margin............................................... | 3.50% | 4.80% | better |
| Return on assets.......................................... | 4.00% | 5.12% | better |
| Return on equity......................................... | 8.20% | 13.25% | better |
| Gross margin.............................................. | 38.00% | 40% | better |
| Receivables turnover.................................. | 9.73 times | 9.87times | better |
| Average collection period.......................... | 37.51 days | 36.99days | better |
| Inventory turnover..................................... | 2.50 times | 2.11times | worse |
| Capital asset turnover................................ | 2.08 times | 1.82times | worse |
| Total asset turnover.................................... | 1.14 times | 1.07times | worse |
| Current ratio............................................... | 1.80 | 0.90 | worse |
| Quick ratio................................................. | 0.70 | 0.24 | worse |
| Debt to total assets..................................... | 58.00% | 61.34% | worse |
| Times interest earned................................. | 3.80 times | 2.60times | worse |

Analysis:

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| Based on the table, we can see all profitability ratio performs better than the industry. The company has higher sales volume and lower cost than its competitors.  All debt utilization ratio and asset utilization perform worse than the industry except receivable turnover and average collection period. Therefore, the company did not manage well on its assets and debt but has quicker turnover in receivable, and collects faster than its competitors.  For the liquidity ratios, either the current ratio or the quick ratio performs worse than the industry. Therefore, the company may do not have enough current assets to pay for its short-term debt. |

Pro formas for 20XY: 25 % of sales, no new capital asset purchases, and a sales increase of 25 percent.

|  |  |
| --- | --- |
| **Rockway Framers Ltd.**  **Balance Sheet at Dec. 31, 20XY** |  |
|  | **20XY** |
| Current assets |  |
| Cash | 1625 |
| Accounts receivable | 45000 |
| Inventories | 126250 |
| Total current assets | 172875 |
| Land | 57700 |
| Buildings and equipment | 222000 |
| Less accumulated amortization | 85000 |
| Total assets | 367575 |
|  |  |
| Current liabilities |  |
| Accounts payable | 60962.5 |
| Notes payable | 122221.5 |
| Total current liabilities | 183184 |
| Long term debt | 51000 |
| Common stock | 70000 |
| Retained earnings | 63391 |
| Total liabilities and equity | 367575 |

|  |  |
| --- | --- |
| Same payout ratio as in 20XX gives dividend in 20XY of: (**78.13%**) | 33192.55 |

|  |  |
| --- | --- |
| **Rockway Framers Ltd.**  **Income Statement for year ending Dec.31** | |
|  | **20XY** |
| Sales | 444000 |
| Cost of goods sold | (266400) |
| Gross profit | 177600 |
| Sales & administration expense | 82140 |
| Amortization\* | 23000 |
| Operating income | 72460 |
| Interest 9.13% | 15815 |
| Earnings before taxes | 56645 |
| Taxes | 14161.25 |
| Net income | 42483.75 |

**\*** Some may wish to add back amortization under the percent of sales method. Most, however choose the assumption that funds generated through amortization (in the sources and uses of funds sense) must be used to replace the capital assets to which amortization is applied. (footnote #3, chapter 4)

*Recommendation:*

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| After our analysis, we recommend that bank should reject the loan request because the company performs worse in current ratio and quick ratio, so the company does not have enough current asset to pay for its debt. It is risky to accept to loan funds to this company. On the other hand, the company has ability to make profit due to a higher profitability ratio. If the company can continually increase its sales, bank can consider to accept the loan request. |

***SOLUTION SHEET – PROBLEM 3***

**Deval Leasehold Improvements Ltd.**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Profitability Ratios*** | **20XX** | **20XW** | **20XV** |
| Profit margin | **2.08%** | **1.65%** | **1.50%** |
| Return on assets | **8.26%** | **6.45%** | **5.63%** |
| Return on equity | **25.76%** | **22.78%** | **21.44%** |
| Gross margin | **41.50%** | **33.30%** | **31.40%** |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Asset Utilization Ratios*** |  |  |  |
| Receivable turnover | **6.50** | **6.00** | **5.60** |
| Avg. Collection period | **56.15** | **60.83** | **65.18** |
| Inventory turnover | **14.63** | **16.67** | **16.48** |
| Inventory holding period | **24.96** | **21.89** | **22.15** |
| Accounts payable turnover | **7.82** | **6.59** | **5.36** |
| Accounts payable period | **46.67** | **55.41** | **68.06** |
| Capital asset turnover | **22.98** | **24.03** | **23.36** |
| Total asset turnover | **3.97** | **3.91** | **3.74** |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Liquidity Ratios*** |  |  |  |
| Current ratio | **1.99** | **1.50** | **1.35** |
| Quick ratio | **1.61** | **1.22** | **1.10** |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Debt Utilization Ratios*** |  |  |  |
| Debt to total assets | **0.68** | **0.72** | **0.74** |
| Times interest earned | **4.29** | **5.13** | **6.62** |
| Fixed charge coverage | **4.29** | **5.13** | **6.62** |

|  |  |  |  |
| --- | --- | --- | --- |
| ***Leverage*** *(based on gross profit not sales less variable costs)* | | | |
| DOL | **12.54** | **13.35** | **14.54** |
| DFL | **1.30** | **1.24** | **1.18** |
| DCL | **16.36** | **16.59** | **17.13** |

*Profitability ratios:*

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| --- |
| All of the profitability ratio increased year by year, so the profitability ratio perform better as time goes by. The company lower its cost in order to increase its profit. The shareholders of this company will be more pleased. |

*Efficiency ratios:*

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| --- |
| The company has quicker turnover in receivable, and its collection period became quicker. Moreover, the company has slower turnover in inventory, and it may have too much inventory. The company has quicker turnover in account payable, and its collection period became quicker.  Managers did well in receivable and payable, but for inventory, it is not satisfied. |

*Debt ratios:*

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| --- |
| All of the debt ratios perform better in the three years which means the firm is stronger than the creditors prefer. Therefore, the company is not heavily in debt and is easy to get additional financing in the future. |

*Leverage:*

|  |
| --- |
| DOL decreased years by years fixed asset decreased on the earning capability of the firm. Therefore, the company has decreased operating income.  DFL measures the sensitivity of a firm’s earnings per share to a change in operating income. DFL increases year by year, the reason behind that is the company has more debt these years. Therefore, the company has higher interests which leads to a lower EPS.  DCL decreases year by year, to explore the reason, the company has lower fixed assets, which leads to a lower EPS. |

*Recommendation:*

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| --- |
| After analyzing the table, the Deval Leasehold company has more debt years by years and faces the cash-flow problem. At this time, in order to solve this problem, it is better for the company accept R. C. Dare's $15,000 investment instead of adding more debts. Therefore, we recommend Deval Leasehold should accept the equity investment of $15,000 by R. C. Dare. |