**Memorandum**

**To: Mr. Byrd, Baylee Byrd Playsets, Inc.**

**From: Patrick Ha, 004**

**RE: Analysis Workbook**

**October 13, 2017**

You requested an analysis of your business.

**The number of playsets you will need to sell and price if you want net margin ratio of 15%.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cell** | **Name** | **Original Value** | **Final Value** | **Integer** |
| $B$3 | Number of Units Sold | 85 | 151 | Integer |
| $B$4 | Revenues per Unit | $ 999.99 | $ 1,091.11 | Contin |

With constraints including total variable expenses less than and equal to $110000, net margin ratio equal 15%, number of units sold less than and equal to 250, and revenues per unit less than and equal to $1100, you should sell 151 units at a price of $1091.11.

**The number of playsets you will need to sell and price if you want net income of $30,000.**

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| --- | --- | --- | --- | --- |
| **Cell** | **Name** | **Original Value** | **Final Value** | **Integer** |
| $B$3 | Number of Units Sold | 85 | 176 | Integer |
| $B$4 | Revenues per Unit | $ 999.99 | $ 1,020.81 | Contin |

With constraints including net income equals $30000, labor equals $200, variable overhead equals $375, fixed overhead equals $7500, and depreciation equals $8500, you should sell 176 units at a price of $1020.81.

**Number of playsets you will need to sell and price if you want a net income of $55000.**

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| --- | --- | --- | --- | --- |
| **Cell** | **Name** | **Original Value** | **Final Value** | **Integer** |
| $B$3 | Number of Units Sold | 85 | 283 | Integer |
| $B$4 | Revenues per Unit | $ 999.99 | $ 1,087.02 | Contin |

With constraints of net income equals $55000 and number of units being an integer, you should sell 283 units at a price of $1087.02.

**3-D pie chart comparing business’s fixed costs.**

Depreciation is the highest fixed cost of 42%, fixed overhead being the second highest, administrative expenses is lowest, and selling expenses is also lowest.

**Max net income if you want fixed overhead of $5000.**

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| --- | --- | --- | --- | --- |
|  | **Cell** | **Name** | **Original Value** | **Final Value** |
|  | $E$21 | Net Income | $ 4,183.50 | $ (3,257.64) |

With constraints of labor equals $250, fixed overhead equals $5000, selling expenses equals $4500, and administrative expenses equals $3000, you should have a negative net income of $3257.64.

**Number of playsets to sell and price if you want net income of $50000.**

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| --- | --- | --- | --- | --- |
| **Cell** | **Name** | **Original Value** | **Final Value** | **Integer** |
| $B$3 | Number of Units Sold | 85 | 269 | Integer |
| $B$4 | Revenues per Unit | $ 999.99 | $ 1,076.92 | Contin |

With constraints of net income equals $50000 and number of units sold being an integer, you should sell 269 units at a price of $1076.92.

**Breakeven point with target income for varying pricing levels.**

|  |  |  |
| --- | --- | --- |
| Revenue and Breakeven | | |
| Comparison | | |
| Revenue per Unit | BEP | Target Income BEP |
| $ 999.99 | 61 | 172 |
| $ 1,000.00 | 61 | 172 |
| $ 1,050.00 | 52 | 145 |
| $ 1,100.00 | 45 | 126 |
| $ 1,150.00 | 39 | 111 |
| $ 1,200.00 | 35 | 99 |
| $ 1,250.00 | 32 | 89 |
| $ 1,300.00 | 29 | 82 |
| $ 1,350.00 | 27 | 75 |
| $ 1,400.00 | 25 | 69 |
| $ 1,450.00 | 23 | 65 |
| $ 1,500.00 | 21 | 60 |
| $ 1,550.00 | 20 | 57 |
| $ 1,600.00 | 19 | 53 |
| $ 1,650.00 | 18 | 51 |
| $ 1,700.00 | 17 | 48 |
| $ 1,750.00 | 16 | 46 |
|  |  |  |
| Revenue per Unit | BEP | Revenue per Unit |
| $ 1,800.00 | 15 | 43 |
| $ 1,850.00 | 15 | 42 |
| $ 1,900.00 | 14 | 40 |
| $ 1,950.00 | 14 | 38 |
| $ 2,000.00 | 13 | 37 |
| $ 2,050.00 | 13 | 35 |
| $ 2,100.00 | 12 | 34 |
| $ 2,150.00 | 12 | 33 |
| $ 2,200.00 | 11 | 32 |
| $ 2,250.00 | 11 | 31 |
| $ 2,300.00 | 11 | 30 |
| $ 2,350.00 | 10 | 29 |
| $ 2,400.00 | 10 | 28 |
| $ 2,450.00 | 10 | 27 |
| $ 2,500.00 | 9 | 26 |

**Number of playsets to sell and price if you do not want to sell more than 120 playsets and want a target income of $60000.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cell** | **Name** | **Original Value** | **Final Value** | **Integer** |
| $B$3 | Number of Units Sold | 85 | 120 | Integer |
| $B$4 | Revenues per Unit | $ 999.99 | $ 1,367.47 | Contin |

With constraints of operating income equals $60000, number of units sold less than or equal to 120, and number of units sold being an integer, you should sell 120 units at a price of $1367.47.

I hope my analysis results helped. If you have any questions or concerns, please contact me by [patrick.long.ha@gmail.com](mailto:patrick.long.ha@gmail.com).