Controlling Business Analytics Using Excel: Exercise 1

Joseph Czerniakow is the owner of a fish market. To better understand his business Joseph asked his assistant, Rachel Hirsh, to record information about all sales transactions.

Open **Fish Market Atlantic Salmon Transactions.txt** files located at the Business Analytics website: www.small-big-data.com.

The data set gives information about Joseph's sales: for each transaction the weight of the fish sold, in pounds, and the total amount charged in this particular transition, in dollars, are given.

Joseph pays a monthly rent of $1,000 for his store and $750 for utilities (electricity, heating, water, sewer, garbage removal, phone, WiFi, etc.). The issuance bill is an additional $250.

Joseph's monthly salary is $3000 and Rachel's is $2500. In addition, Joseph always employs several part-time sales associates for a total of 40 hours per month at an hourly wage of $12.5.

For the whole monthly delivery, the supplier charged Joseph $4,288.06.

To assess his profitability, Joseph ask Rachel to prepare an internal income statement for his business for one month. This income statement should include 5 rows: Sales Revenue/(Less) Cost of Goods Sold/Gross Profit/(Less) Operating Expenses/Operating Income.

1. Based on the information, what is Joseph's Sales Revenue?
A. 12,141
B. 15,141
C. 16,141
D. 17,141
E. None of the above

2. To cover his costs and to generate a decent profit, Joseph expected to generate $18,000 in Sales Revenue. What is the difference between his planed Sales Revenue vs. actual data? The actual Sales Revenue was_____ (than) planned.
A. 5,859 lower
B. 2,859 lower
C. about the same
D. 5,859 higher
E. None of the above

3. Based on the information, what is Joseph's Gross Profit?
A. 7,852
B. 8,852
C. 9,852
D. 17,852
E. None of the above

4. Based on the information, what is Joseph's Operating Income?
A. -148
B. 148
C. 1,480
D. 2,480
E. None of the above

5. Based on the information, what is the average price Joseph charged for a pound of fish sold, in dollars?
A. 10
B. 15
C. 17
D. 17.91
E. None of the above

6. Assuming Joseph expects comparable sales volumes (in pounds) next month, what should be the price for a pound of fish sold, in dollars, to generate $18,000 in Sales Revenue?
A. 15
B. 17
C. 17.91
D. 22.24
E. None of the above

Solution

The objective of this exercise is to practice how to conduct a basic Controlling Business Analytics using an application software such as MS Excel.

MS Excel formulas to be used include:
=SUM()

First, you need to import the **Fish Market Atlantic Salmon Transactions.txt** file located at the Business Analytics website: www.small-big-data.com (depicted in Figure 1) into Excel. The file is tab delimited. The procedure of importing text files into Excel is described at:
http://www.small-big-data.com/baexcelworkshop.htm

1. After importing the data set **Fish Market Atlantic Salmon Transactions.txt**, we can find the Sale's Revenue by simply using the SUM function. We select the values in the Total Amount (column C) since they represent the dollar amount we have obtained from each sale.

	A	B	C
1	TranID	Weight	TotalAmount
2	119815	9.04	135.6
3	119881	10.11	151.65
4	119896	9.74	146.1
5	119905	9.64	144.6
6	119939	8.14	122.1
7	119946	9.47	142.05
8	120000	10.08	151.2
9	120033	10.5	157.5
10	214978	10.52	157.8
11	219811	28.07	421.05
12	219853	9.05	135.75
13	219855	8.98	134.7
14	219872	9.9	148.5
15	219899	8.61	129.15
16	220007	10.29	154.35
17	220018	9.36	140.4
18	220028	9.72	145.8
19	220079	9.55	143.25
20	314957	9.26	138.9
21	314968	9.94	149.1
22	314995	10.26	153.9
23	315024	9.54	143.1
24	319806	9.44	141.6
25	319867	18.36	275.4

Figure 1.

Sales Revenue	=SUM(C2:C82)	12140.55

The answer is A, which is $12,141.

2. For this question, we need to use the Sales Revenue obtained in the previous question, which is his actual revenue data. As this problem describes, he was planning on generating $18,000 in revenue. The difference between actual revenue and planned revenue can be found by subtracting actual revenue minus planned revenue in the following way:

Difference	=12140.55-18000	-5859.45

The answer is A, which is $5859 lower.

3. Gross Profit is defined as Sales Revenue minus Cost of Goods sold. We need to use the sales revenue obtained in the first question which was $12,140.55 and subtract the given value for Cost of Goods Sold in the problem which is $4288.06.

Gross Profit	=12140.55-4288.06	7852.49

The answer to this problem is $7852, which is A.

4. Operating Income is the Gross Profit found above minus the operating expenses given in the problem. Take the operating income, use the minus sign to indicate subtraction and use parenthesis to indicate you are starting a new operation within the same cell. Use the SUM function to add up all the given expenses, to find the labor expense, multiply number of hours worked by the hourly rate.

Operating Income						=7852.49-(SUM(1000,750,250,3000,2500,40*12.5))	-147.51
Expenses:	1000	750	250	3000	2500	=40*12.5	

This calculation will give us a negative operating profit of $-147.51, which is answer A.

5. To find the average price charged for a pound of fish sold, we just divide the total Sales Revenue by the total weight. To calculate the total weight, the SUM function can be used, we need to select all the values in the weight column to add them up. The answer is B, which is $15.

Average Price per pound	=12140.55/809.37	15

Total Weight	=SUM(B2:B81)	809.37

	A	B	C
1	TranID	Weight	TotalAmount
2	119815	9.04	135.6
3	119881	10.11	151.65
4	119896	9.74	146.1
5	119905	9.64	144.6
6	119939	8.14	122.1
7	119946	9.47	142.05
8	120000	10.08	151.2
9	120033	10.5	157.5
10	214978	10.52	157.8
11	219811	28.07	421.05
12	219853	9.05	135.75
13	219855	8.98	134.7
14	219872	9.9	148.5
15	219899	8.61	129.15
16	220007	10.29	154.35
17	220018	9.36	140.4
18	220028	9.72	145.8
19	220079	9.55	143.25
20	314957	9.26	138.9
21	314968	9.94	149.1
22	314995	10.26	153.9
23	315024	9.54	143.1
24	319806	9.44	141.6
25	319867	18.36	275.4

6. To find the price for a pound of fish needed to generate $18,000 next month is found by taking the target revenue and diving it by the total weight. The answer is D, which is $22.24.

Total Weight	=SUM(B2:B81)	809.37
Target Revenue	18000	

Target Revenue Price	=18000/809.37	22.24

Answers

Exercise
1. A
2. A
3. A
4. A
5. B
6. D