Results

According to table 1, California has the most sales and profit at 457,687 and 76,380 dollars following by New York at 310,876 and 75,038 dollars.

```
Sales                           Profit

State                           State
California     457687.6315      California     76380.4163
New York       310876.2710      New York       74038.5486
Texas          170188.0458      Washington     33402.6517
Washington     138641.2700      Michigan       24461.1876
Pennsylvania   116511.9140      Virginia       18597.9504
```

Table 1

I also found that there are States that didn't do well at all but in the other hand, they're making a huge loss especially Texas and Pennsylvania which is in top 5 highest Sales.

```
Sales                           Profit

State                           State
North Dakota     919.910        Texas            -25729.3563
West Virginia   1209.824        Ohio             -16971.3766
Maine           1270.530        Pennsylvania     -15559.9603
South Dakota    1315.560        Illinois         -12607.8870
Wyoming         1603.136        North Carolina    -7490.9122
```

Table 2

I also found that discount doesn't affect the Quantity of Sales. According to table 3 which is showing the correlation between Quantity and Discount is at 0.0086 out of 1 which is very low combine with table 1 that is showing that even Texas and Pennsylvania is in the top 5 highest sales, but they didn't do well in making profit. With this result, both Sales and Marketing team must change the promotion price and budgets strategies to fix this problem.

Table 3

Another thing I found during the analysis is that sales and profit is correlated to each other showing on the line graph but according to graph 1 you'll see that there are a lot of sales that is a loss (profit in negative area)
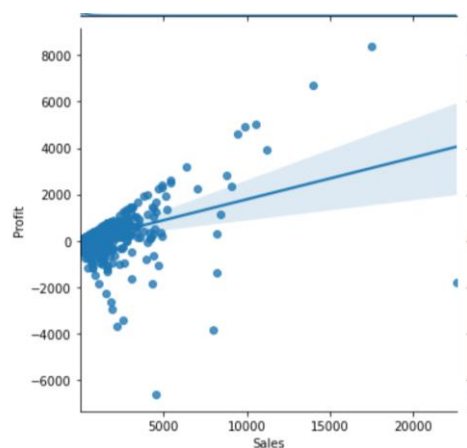
Graph 1

With that, I decide to go and investigate the problem and found that Machines has the highest loss at 6,599.9 dollars. On the total loss profit, we see that Furniture has the highest loss rate at 69,936 dollars. With the result, I recommend reducing the cost of the product, increase the product price, and change the market strategy to fix this problem. I have conclude the analysis result in table 4

Category	Sub-Category	Profit	Sales
Technology	Machines	-6599.9780	4499.985
Technology	Machines	-3839.9904	7999.980
Office Supplies	Binders	-3701.8928	2177.584
Technology	Machines	-3399.9800	2549.985
Office Supplies	Binders	-2929.4845	1889.990
...	...	...	...
Office Supplies	Binders	4630.4755	9449.950
Office Supplies	Binders	4946.3700	9892.740
Technology	Copiers	5039.9856	10499.970
Technology	Copiers	6719.9808	13999.960
Technology	Copiers	8399.9760	17499.950

Category	Sales	Profit
Furniture	276882.8338	-60936.1090
Office Supplies	100058.2830	-56615.2585
Technology	119452.8850	-38579.9182

Table 4