Question 1 (0.5 Point):

Write an SQL query to calculate the total sales of furniture products, grouped by each quarter of the year, and order the results chronologically.

Expected result:

	Quarter_Year	Total_Sales
1	Q1-2014	22656.14
2	Q2-2014	28063.75
3	Q3-2014	41957.88
4	Q4-2014	64515.09
5	Q1-2015	27374.1
6	Q2-2015	27564.83
7	Q3-2015	49586.04
8	Q4-2015	65993.28
9	Q1-2016	24349.39
10	Q2-2016	41402.5
11	Q3-2016	52814.63
12	Q4-2016	80334.92
13	Q1-2017	23723.81
14	Q2-2017	45032.1
15	Q3-2017	56283.1
16	Q4-2017	90348.25

Question 2 (0.5 Point):

```
Analyze the impact of different discount levels on sales
performance across product categories,
specifically looking at the number of orders and total
profit generated for each discount classification.

Discount level condition:
No Discount = 0
0 < Low Discount <= 0.2
0.2 < Medium Discount <= 0.5
High Discount > 0.5
```

Expected result:

	CATEGORY	Discount_Class	Number_of_Orders	Total_Profit
28	Labels	Medium Discount	125	1124.16
29	Labels	No Discount	239	4422.1
30	Machines	High Discount	23	-19579.32
31	Machines	Low Discount	2	832.08
32	Machines	Medium Discount	61	-5005.83
33	Machines	No Discount	29	27137.82
34	Paper	Medium Discount	513	8724.1
35	Paper	No Discount	857	25329.47
36	Phones	Medium Discount	578	10150.52
37	Phones	No Discount	311	34365.21
38	Storage	Medium Discount	316	-4249.35
39	Storage	No Discount	530	25528.17
40	Supplies	Medium Discount	73	-2907.49
41	Supplies	No Discount	117	1718.39
42	Tables	Medium Discount	247	-30581.78
43	Tables	No Discount	72	13276.3

Question 3 (1.0 Point):

Determine the top-performing product categories within each customer segment based on sales and profit, focusing specifically on those categories that rank within the top two for profitability.

Expected result:

	SEGMENT	CATEGORY	Sales_Rank	Profit_Rank
1	Consumer	Copiers	8	1
2	Consumer	Phones	2	2
3	Corporate	Copiers	8	1
4	Corporate	Accessories	7	2
5	Home Office	Copiers	7	1
6	Home Office	Phones	1	2

Question 4 (1.0 Point):

Create a report that displays each employee's performance across different product categories, showing not only the total profit per category but also what percentage of their total profit each category represents, with the result ordered by the percentage in descending order for each employee.

Expected result:

	ID_EMPLOYEE	CATEGORY	Rounded_Total_Profit	Profit_Percentage
14	1	Bookcases	67.94	0.3
15	1	Fasteners	62.42	0.28
16	1	Tables	17.24	0.08
17	1	Supplies	-117.5	-0.52
18	2	Accessories	3157.32	21.18
19	2	Phones	3082.88	20.68
20	2	Copiers	2110.96	14.16
21	2	Paper	1674.16	11.23
22	2	Chairs	1624.18	10.9
23	2	Storage	1574.87	10.57
24	2	Appliances	1347.31	9.04

	ID_EMPLOYEE	CATEGORY	Rounded_Total_Profit	Profit_Percentage
99	6	Fasteners	200.89	0.29
100	6	Bookcases	-366.96	-0.53
101	6	Tables	-5895.66	-8.57
102	7	Phones	5632.2	18.06
103	7	Machines	3925.56	12.59
104	7	Paper	3762.99	12.07
105	7	Appliances	3319.68	10.65
106	7	Accessories	3200.86	10.27
107	7	Chairs	2783.28	8.93
108	7	Storage	2604.56	8.35
109	7	Copiers	1524.96	4.89

Question 5 (0.5 Point):

Develop a user-defined function in SQL Server to calculate the profitability ratio for each product category an employee has sold, and then apply this function to generate a report that sorts each employee's product categories by their profitability ratio.

Expected result:

	ID_EMPLOYEE	CATEGORY	Total_Sales	Total_Profit	Profitability_Ratio
32	2	Supplies	2265.46	-83.09	-0.04
33	2	Bookcases	10561.85	-1176.82	-0.11
34	2	Binders	12525.22	-1666.12	-0.13
35	3	Labels	133.25	63.2	0.47
36	3	Paper	1998.93	893.65	0.45
37	3	Envelopes	467.4	190.98	0.41
38	3	Fasteners	24.43	9.63	0.39
39	3	Binders	10495.37	3669.02	0.35
40	3	Accessories	4465.47	1241.41	0.28
41	3	Appliances	1922.2	484.96	0.25
42	3	Art	496.75	107.05	0.22

	ID_EMPLOYEE	CATEGORY	Total_Sales	Total_Profit	Profitability_Ratio
98	6	Chairs	73219.43	5592.61	0.08
99	6	Supplies	10797.32	396.71	0.04
100	6	Bookcases	19521.86	-366.96	-0.02
101	6	Tables	44257.89	-5895.66	-0.13
102	7	Envelopes	2485.64	1072.82	0.43
103	7	Labels	439.32	185.59	0.42
104	7	Paper	8929.84	3762.99	0.42
105	7	Copiers	5079.87	1524.96	0.3
106	7	Fasteners	424.35	122.73	0.29
107	7	Art	2499.57	627.3	0.25
108	7	Accessories	13442.69	3200.86	0.24

Question 6 (0.5 Point): Write a stored procedure to calculate the total sales and profit for a specific EMPLOYEE_ID over a specified date range. The procedure should accept EMPLOYEE_ID, StartDate, and EndDate as parameters.

Input and expected result:

```
EXEC GetEmployeeSalesProfit @EmployeeID = 3, @StartDate = '2016-12-01', @EndDate = '2016-12-31';
```

	EMPLOYEE_NAME	TOTAL_SALES	TOTAL_PROFIT
1	Michael Johnson	3183.43	791.24

Question 7 (1.0 Point): `Write a query using dynamic SQL query to calculate the total profit for the last six quarters in the datasets, pivoted by quarter of the year, for each state.`

Expected result:

Results Messages

	STATE	Q4-2017	Q3-2017	Q2-2017	Q1-2017	Q4-2016	Q3-2016
1	Alabama	-62.9	-915.84	261.67	-8.14	2522.71	262.27
2	Arizona	-217.73	186.36	927.82	305.29	4997.61	544.52
3	Arkansas	13.98	-19.14	-2.06	-173.35	NULL	-15.17
4	California	4283.47	5350.7	3225.76	1065.45	8637.56	3737.39
5	Colorado	769.12	316.82	-3352.77	221.88	837.26	365.48