41. Identify the Most Discounted Products

```
SELECT p.product_id, p.name AS product_name, SUM(d.discount_amount) AS
total_discount
FROM products p
JOIN discounts d ON p.product_id = d.product_id
GROUP BY p.product_id, p.name
ORDER BY total_discount DESC
LIMIT 5;
```

product_id	product_name	total_discount
7	Croissants	6080.37
31	Macaroni	5681.37
41	Laundry Detergent	5529.48
63	Lettuce	5416.17
14	Vegetable Mix	5343.85

---

42. Top 5 Customers by Lifetime Value

```
SELECT o.user_id, u.full_name, SUM(o.total_amount) AS total_spent
FROM orders o
JOIN users u ON o.user_id = u.user_id
GROUP BY o.user_id, u.full_name
ORDER BY total_spent DESC
LIMIT 5;
```

	user_id	full_name	total_spent
▶	398	Michael Walker	10181.53
	1627	James Lewis	9243.51
	5977	Sophia Jackson	9197.17
	1195	Sarah Lewis	8965.67
	1697	Sophia White	8874.65

43. Identify Repeat Customers

```
SELECT o.user_id, u.full_name, COUNT(o.order_id) AS total_orders
FROM orders o
JOIN users u ON o.user_id = u.user_id
GROUP BY o.user_id, u.full_name
HAVING total_orders >= 3;
```

	user_id	full_name	total_orders
▶	1	Emma Smith	4
	2	Daniel White	3
	3	Olivia Anderson	3
	8	James White	4
	9	Alexander Allen	3
	11	James Walker	3
	12	Mia White	3
	13	Benjamin Hall	3
	14	Daniel Smith	4
	15	Sophia Robinson	3
	16	Matthew Harris	3
	18	Matthew Taylor	5
	20	Emma Garcia	4
	21	Ava Allen	3
	22	Daniel Johnson	3

44. Calculate Customer Retention Rate

```
WITH monthly_orders AS (
  SELECT user_id, DATE_FORMAT(order_date, '%Y-%m') AS order_month
  FROM orders
  GROUP BY user_id, order_month
)
SELECT COUNT(DISTINCT user_id) AS retained_customers,
    (COUNT(DISTINCT user_id) / (SELECT COUNT(*) FROM users)) * 100 AS retention_rate
FROM monthly_orders
WHERE order_month IN (
  DATE_FORMAT(NOW(), '%Y-%m'),
  DATE_FORMAT(DATE_SUB(NOW(), INTERVAL 1 MONTH), '%Y-%m'),
  DATE_FORMAT(DATE_SUB(NOW(), INTERVAL 2 MONTH), '%Y-%m')
);
```

	retained_customers	retention_rate
▶	9497	94.9700

---

45. Identify Churned Users (Users Who Have Not Purchased in the Last 6 Months)

```
SELECT user_id, full_name FROM users
WHERE user_id NOT IN (
  SELECT DISTINCT user_id FROM orders
  WHERE order_date >= DATE_SUB(NOW(), INTERVAL 6 MONTH)
);
```

user_id	full_name
7	John Brown
36	Daniel Brown
48	Charlotte Martinez
80	Emma Garcia
107	Amelia Anderson
126	Amelia Smith
134	Benjamin Martin
196	Ava Johnson
197	Ava Jackson
219	Emma Harris
256	James Anderson
258	Olivia Rodriguez
276	Benjamin Thomas
366	Daniel Allen
390	William Lewis

---

47. Retrieve the 5 Most Recently Ordered Products

```
SELECT p.name, o.order_date
FROM order_items oi
JOIN products p ON oi.product_id = p.product_id
JOIN orders o ON oi.order_id = o.order_id
ORDER BY o.order_date DESC
LIMIT 5;
```

	name	order_date
▶	Miso Paste	2025-01-30 02:14:03
	Granola Bars	2025-01-30 02:14:03
	Pet Shampoo	2025-01-30 02:14:03
	Potato Chips	2025-01-30 02:08:33
	Miso Paste	2025-01-30 02:08:33

---

49. Identify High-Value Orders (Top 10% by Order Value)

```
WITH order_values AS (
  SELECT order_id, total_amount, PERCENT_RANK() OVER (ORDER BY total_amount
DESC) AS percentile
  FROM orders
)
SELECT * FROM order_values WHERE percentile <= 0.10;
```

	order_id	total_amount	percentile
▶	23540	1499.98	0
	25198	1499.86	0.00003333444448148272
	17506	1499.85	0.00006666888896296543
	22383	1499.65	0.00010000333344444814
	4644	1499.59	0.00013333777792593087
	13827	1499.55	0.00016666722224074136
	15884	1499.51	0.00020000066668888963
	20465	1499.45	0.00023333411111370379
	7867	1499.40	0.00026666755585186174
	12928	1499.39	0.00030001000033334443
	12455	1499.37	0.00033333444448148272
	5941	1499.23	0.00036666788892963099
	16609	1499.21	0.00040000133337777926
	23509	1499.17	0.00043333477782592753
	13404	1499.13	0.00046666822227407581

---

50. Find Products That Have Been Ordered More Than Their Available Stock

```
SELECT p.product_id, p.name, pv.stock, SUM(oi.quantity) AS total_ordered
FROM order_items oi
JOIN products p ON oi.product_id = p.product_id
JOIN product_variants pv ON oi.product_id = pv.product_id
GROUP BY p.product_id, p.name, pv.stock
HAVING total_ordered > pv.stock;
```

product_id	name	stock	total_ordered
43	All-Purpose Cleaner	44	2859
43	All-Purpose Cleaner	41	2859
60	Aluminum Foil	28	2926
60	Aluminum Foil	7	2926
62	Apples	1	3095
62	Apples	32	3095
62	Apples	26	3095
48	Baby Shampoo	6	2904
48	Baby Shampoo	10	2904
46	Baby Wipes	39	3066
6	Bagels	0	2965
6	Bagels	45	2965
26	Baked Beans	31	2922
61	Bananas	46	3102
61	Bananas	3	3102