```sql
SELECT TOP (1000) [customer_id]
      ,[age]
      ,[gender]
      ,[item_purchased]
      ,[category]
      ,[purchase_amount]
      ,[location]
      ,[size]
      ,[color]
      ,[season]
      ,[review_rating]
      ,[subscription_status]
      ,[shipping_type]
      ,[discount_applied]
      ,[previous_purchases]
      ,[payment_method]
      ,[frequency_of_purchases]
      ,[age_group]
      ,[purchase_frequency_days]
  FROM [customer_behavior].[dbo].[customer_behavior_preprocessed]


 --1. What is the total revenue generated by male vs female customers?

ALTER TABLE customer_behavior_preprocessed
ALTER COLUMN purchase_amount DECIMAL(18,2);

SELECT gender,SUM(purchase_amount) AS revenue
FROM customer_behavior_preprocessed
GROUP BY gender;


--2. Which customers used a discount but still spent more than the average purchase amount?

SELECT customer_id, purchase_amount
FROM customer_behavior_preprocessed
WHERE discount_applied = 'Yes'
AND purchase_amount > (SELECT AVG(purchase_amount) FROM customer_behavior_preprocessed);

--3. What are the top 5 products with the highest average review rating?
ALTER TABLE customer_behavior_preprocessed
ALTER COLUMN review_rating DECIMAL(3,2);

SELECT TOP 5 item_purchased, CAST(AVG(review_rating) AS DECIMAL(4,2)) AS "Average Product Rating"
FROM customer_behavior_preprocessed
GROUP BY item_purchased
```

```sql
ORDER BY AVG(review_rating) DESC;

--4. Comapre the average purchase amounts between Standard and Express shipping
SELECT shipping_type,
ROUND(AVG(purchase_amount),2) AS "Average Purchase Amount by Shipping"
FROM customer_behavior_preprocessed
WHERE shipping_type IN ('Standard','Express')
GROUP BY shipping_type

--5. Do subscribed customers spend more? Compare average spend and total revenue between subscribers and non-subscribers
SELECT subscription_status,
COUNT (customer_id) AS total_customers,
ROUND(AVG(purchase_amount),2) AS avg_spend,
ROUND(SUM(purchase_amount),2) AS total_revenue
FROM customer_behavior_preprocessed
GROUP BY subscription_status
ORDER BY total_revenue, avg_spend DESC;

--6. Which 5 products have the highest percentage of purchases with discounts applied?
SELECT TOP 5 item_purchased,
CAST(100*SUM(CASE WHEN discount_applied = 'Yes' THEN 1 ELSE 0 END)/ COUNT(*) AS DECIMAL(5,2)) AS discount_rate
FROM customer_behavior_preprocessed
GROUP BY item_purchased
ORDER BY discount_rate DESC;

--7. Segement customers into New, Returning and Loyal based on their total number of previous purchases, and show the count of each segment
WITH customer_type AS (
SELECT customer_id, previous_purchases,
CASE
    WHEN previous_purchases = 1 THEN 'New'
    WHEN previous_purchases BETWEEN 2 and 13 THEN 'Returning'
    ELSE 'Loyal'
    END AS customer_segment
FROM customer_behavior_preprocessed)

SELECT customer_segment, COUNT(*) AS 'Number of Customers'
FROM customer_type
GROUP BY customer_segment;


--8. Are customers who are repeat buyers (more than 5 previous purchases) more likely to subscibe?
SELECT subscription_status,
COUNT (customer_id) AS repeat_buyers
FROM customer_behavior_preprocessed
```

```sql
WHERE previous_purchases > 5
GROUP BY subscription_status;

--9. What is the total revenue contribution to each age group?
SELECT age_group,
SUM(purchase_amount) AS total_revenue
FROM customer_behavior_preprocessed
GROUP BY age_group
ORDER BY total_revenue DESC;
```