1) What are the top 5 brands by receipts scanned for most recent month?

```sql
WITH latest_month AS (
    SELECT DATE_FORMAT(MAX(purchaseDate), '%Y-%m-01') AS last_month
    FROM Receipts
)
SELECT
    b.name AS brand,
    COUNT(DISTINCT r.receipt_id) AS receipt_count
FROM Receipts r
JOIN Items i ON r.receipt_id = i.receipt_id
JOIN Brands b ON i.barcode = b.barcode
WHERE DATE_FORMAT(r.purchaseDate, '%Y-%m-01') = (SELECT last_month FROM latest_month)
GROUP BY b.name
ORDER BY receipt_count DESC
LIMIT 5;
```

2) How does the ranking of the top 5 brands by receipts scanned for the recent month compare to the ranking for the previous month?

```sql
WITH latest_months AS (
    SELECT DISTINCT DATE_FORMAT(purchaseDate, '%Y-%m-01') AS month
    FROM Receipts
    ORDER BY month DESC
    LIMIT 2
),
brand_receipt_counts AS (
    SELECT
        b.name AS brand,
        DATE_FORMAT(r.purchaseDate, '%Y-%m-01') AS month,
        COUNT(DISTINCT r.receipt_id) AS receipt_count
    FROM Receipts r
    JOIN Items i ON r.receipt_id = i.receipt_id
    JOIN Brands b ON i.barcode = b.barcode
    WHERE DATE_FORMAT(r.purchaseDate, '%Y-%m-01') IN (SELECT month FROM latest_months)
    GROUP BY b.name, month
),
ranked_brands AS (
    SELECT
        brand,
        month,
        receipt_count,
        RANK() OVER (PARTITION BY month ORDER BY receipt_count DESC) AS rank
    FROM brand_receipt_counts
)
```

```
SELECT
    rb1.brand,
    rb1.month AS recent_month,
    rb1.rank AS recent_rank,
    rb2.month AS previous_month,
    rb2.rank AS previous_rank
FROM ranked_brands rb1
LEFT JOIN ranked_brands rb2
    ON rb1.brand = rb2.brand
    AND rb1.month = (SELECT MAX(month) FROM latest_months)
    AND rb2.month = (SELECT MIN(month) FROM latest_months)
WHERE rb1.rank <= 5 OR rb2.rank <= 5
ORDER BY recent_rank;
```

3)When considering *average spend* from receipts with 'rewardsReceiptStatus' of 'Accepted' or 'Rejected', which is greater?

```
SELECT
    rewardsReceiptStatus,
    AVG(totalSpent) AS average_spent
FROM Receipts
WHERE rewardsReceiptStatus IN ('Accepted', 'Rejected')
GROUP BY rewardsReceiptStatus
ORDER BY average_spent DESC;
```

4) When considering *total number of items purchased* from receipts with 'rewardsReceiptStatus' of 'Accepted' or 'Rejected', which is greater?

```
SELECT
    rewardsReceiptStatus,
    SUM(purchasedItemCount) AS total_items_purchased
FROM Receipts
WHERE rewardsReceiptStatus IN ('Accepted', 'Rejected')
GROUP BY rewardsReceiptStatus
ORDER BY total_items_purchased DESC;
```

5) Which brand has the most *spend* among users who were created within the past 6 months?

```
WITH recent_users AS (
    SELECT user_id
    FROM Users
    WHERE createdDate >= DATE_SUB(CURDATE(), INTERVAL 6 MONTH)
)
SELECT
    b.name AS brand,
    SUM(r.totalSpent) AS total_spent
FROM Receipts r
```

JOIN Items i ON r.receipt_id = i.receipt_id
JOIN Brands b ON i.barcode = b.barcode
WHERE r.user_id IN (SELECT user_id FROM recent_users)
GROUP BY b.name
ORDER BY total_spent DESC
LIMIT 1;

6) Which brand has the most *transactions* among users who were created within the past 6 months?

WITH recent_users AS (
    SELECT user_id
    FROM Users
    WHERE createdDate >= DATE_SUB(CURDATE(), INTERVAL 6 MONTH)
)
SELECT
    b.name AS brand,
    COUNT(DISTINCT r.receipt_id) AS transaction_count
FROM Receipts r
JOIN Items i ON r.receipt_id = i.receipt_id
JOIN Brands b ON i.barcode = b.barcode
WHERE r.user_id IN (SELECT user_id FROM recent_users)
GROUP BY b.name
ORDER BY transaction_count DESC
LIMIT 1;