--Question 1: Explore Dataset.

```sql
SELECT * FROM members
LIMIT 3;
SELECT * FROM prices
LIMIT 3;
SELECT * FROM transactions
LIMIT 3;
```

--Question 2: Sort all the rows in the table by first_name in alphabetical order and show the top 3 rows.

```sql
SELECT * FROM members
ORDER BY first_name
LIMIT 3;
```

--Question 3: Which records from trading members are from the United States region?

```sql
SELECT * FROM members
WHERE region = 'United States';
```

--Question 4: Select only the member_id and first_name columns for members not from Australia.

```sql
SELECT
  member_id,
  first_name
FROM members
WHERE region != 'Australia';
```

--Question 5: Return the unique region values from the trading.members table and sort the output by reverse alphabetical order

```sql
SELECT DISTINCT region
FROM members
ORDER BY region DESC;
```

--Question 6: How many mentors are there per region? Sort the output by regions with the most mentors to the least.

```sql
SELECT
  region,
  COUNT(*) AS mentor_count
FROM members
GROUP BY region
ORDER BY mentor_count DESC;
```

--Question 7: How many US mentors and non-US mentors are there?

```sql
SELECT
  (CASE
    WHEN members.region != 'United States' THEN 'Non US'
    ELSE members.region
  END) mentor_region,
  COUNT(*) AS mentor_count
FROM members
GROUP BY  (CASE
    WHEN members.region != 'United States' THEN 'Non US'
    ELSE members.region
  END)
ORDER BY mentor_count DESC;
```

--Question 8: How many total records do we have in the prices table?

```sql
SELECT
  COUNT(*) AS total_records
FROM prices;
```

--Question 9: How many records are there per ticker value?

```sql
SELECT
  ticker,
  COUNT(*) AS record_count
FROM prices
GROUP BY ticker;
```

--Question 10: What are the minimum and maximum market_date values?

```sql
SELECT
  ticker,
  MIN(market_date) AS min_date,
  MAX(market_date) AS max_date
FROM prices
GROUP BY ticker;
```

--Question 11: Are there any duplicate market_date values for any ticker value in our table?

```sql
SELECT
  ticker,
  COUNT(market_date) AS total_count,
  COUNT(DISTINCT market_date) AS unique_count
FROM prices
GROUP BY ticker;
```

--Question 12: How many days from the prices table exist where the high price of Bitcoin is over $20,000?

```sql
SELECT
  COUNT(*) AS row_count
FROM prices
WHERE ticker = 'BTC'
  AND high > 20000;
```

--Question 13: How many buy and sell transactions are there for Bitcoin?

```sql
SELECT
  txn_type,
  COUNT(*) AS transaction_count
FROM transactions
WHERE ticker = 'BTC'
GROUP BY txn_type;
```

--Question 14: Which members have sold less than 500 Bitcoin? Sort the output from the most BTC sold to the least.

```sql
WITH cte AS (
SELECT
  member_id,
  SUM(quantity) AS btc_sold_quantity
FROM transactions
WHERE ticker = 'BTC'
  AND txn_type = 'SELL'
GROUP BY member_id
)
SELECT * FROM cte
WHERE btc_sold_quantity < 500
ORDER BY btc_sold_quantity DESC;
```

--Question 15: Which member_id has the highest buy to sell ratio by quantity?

```sql
SELECT
  member_id,
  SUM(CASE WHEN txn_type = 'BUY' THEN quantity ELSE 0 END) /
    SUM(CASE WHEN txn_type = 'SELL' THEN quantity ELSE 0 END) AS buy_to_sell_ratio
FROM transactions
GROUP BY member_id
ORDER BY buy_to_sell_ratio DESC;
```

--Question 16: Which top 3 mentors have the most Bitcoin quantity as of the end of the period?

```sql
SELECT
  members.first_name,
  SUM(
    CASE
```

```
      WHEN transactions.txn_type = 'BUY'  THEN transactions.quantity
      WHEN transactions.txn_type = 'SELL' THEN transactions.quantity
    END
  ) AS total_quantity
FROM transactions
INNER JOIN members
  ON transactions.member_id = members.member_id
WHERE ticker = 'BTC'
GROUP BY members.first_name
ORDER BY total_quantity DESC
LIMIT 3;
```