Question 1:

How many customers has Foodie-Fi ever had?

Query:

```
SELECT COUNT(DISTINCT customer_id)
AS unique_customer
FROM dbo.subscriptions;
```

Question 2:

What is the monthly distribution of trial plan start_date values for our dataset?

Query:

```
SELECT DATE_PART('month',start_date) AS month_date,
TO_CHAR(start_date, 'Month') AS month_name, COUNT(*) AS trial_subscriptions
FROM dbo.subscriptions s
JOIN dbo.plans p
ON s.plan_id = p.plan_id
WHERE s.plan_id = 0
GROUP BY DATE_PART('month',start_date), TO_CHAR(start_date, 'Month')
ORDER BY month_date ASC;
```

Question 3:

What plan start_date values occur after the year 2020 for our dataset? Show the breakdown by count of events for each plan_name.

Query:

```
SELECT p.plan_id, p.plan_name,
COUNT(*) AS events
FROM dbo.subscriptions s
JOIN dbo.plans p
ON s.plan_id = p.plan_id
WHERE s.start_date >= '2021-01-01'
GROUP BY p.plan_id, p.plan_name
ORDER BY p.plan_id;
```

Question 4:

What is the customer count and percentage of customers who have churned rounded to 1 decimal place?

Query:

```
SELECT COUNT(*) AS churn_count,
ROUND(100 * COUNT(*)::NUMERIC / ( SELECT COUNT(DISTINCT customer_id)
FROM dbo.subscriptions),1) AS churn_percentage
FROM dbo.subscriptions s JOIN dbo.plans p
ON s.plan_id = p.plan_id
WHERE s.plan_id = 4;
```

Question 5:

How many customers have churned straight after their initial free trial? — what percentage is this rounded to the nearest whole number?

Query:

```
WITH ranking AS ( SELECT s.customer_id,
s.plan_id, p.plan_name,
ROW_NUMBER() OVER ( PARTITION BY s.customer_id ORDER BY s.plan_id) AS plan_rank
FROM dbo.subscriptions s
JOIN dbo.plans p ON s.plan_id = p.plan_id )
SELECT COUNT(*) AS churn_count,
ROUND(100 * COUNT(*) / ( SELECT COUNT(DISTINCT customer_id)
FROM dbo.subscriptions),0) AS churn_percentage
FROM ranking WHERE plan_id = 4
AND plan_rank = 2
```

Question 6:

What is the number and percentage of customer plans after their initial free trial?

Query:

```
WITH next_plan_cte AS (
SELECT customer_id, plan_id,
LEAD(plan_id, 1) OVER( PARTITION BY customer_id ORDER BY plan_id) as next_plan
FROM dbo.subscriptions)

SELECT next_plan, COUNT(*) AS conversions,
ROUND(100 * COUNT(*)/ ( SELECT COUNT(DISTINCT customer_id) FROM dbo.subscriptions),1)
AS conversion_percentage FROM next_plan_cte
WHERE next_plan IS NOT NULL
AND plan_id = 0
GROUP BY next_plan
ORDER BY next_plan;
```

Question 7:

What is the customer count and percentage breakdown of all 5 plan_name values at 2020–12–31?

Query:

```
WITH next_plan AS(
SELECT customer_id, plan_id, start_date,
LEAD(start_date, 1) OVER(PARTITION BY customer_id ORDER BY start_date) as next_date
FROM dbo.subscriptions WHERE start_date <= '2020-12-31' ),
customer_breakdown AS (
SELECT plan_id, COUNT(DISTINCT customer_id) AS customers FROM next_plan
WHERE (next_date IS NOT NULL  AND (start_date < '2020-12-31' AND next_date > '2020-12-31'))
OR (next_date IS NULL AND start_date < '2020-12-31') GROUP BY plan_id)

SELECT plan_id, customers,
ROUND(100 * customers / ( SELECT COUNT(DISTINCT customer_id) FROM dbo.subscriptions),1)
AS percentage
FROM customer_breakdown GROUP BY plan_id, customers ORDER BY plan_id;
```

Question 8:

How many customers have upgraded to an annual plan in 2020?

Query:

```
SELECT COUNT(DISTINCT customer_id)
AS unique_customer
FROM dbo.subscriptions
WHERE plan_id = 3
AND start_date <= '2020-12-31';
```

Question 9:

How many days on average does it take a customer to an annual plan from the day they join Foodie-Fi?

Query:

```
WITH trial_plan AS (
SELECT customer_id, start_date AS trial_date
FROM dbo.subscriptions WHERE plan_id = 0 ),
annual_plan AS (
SELECT customer_id, start_date AS annual_date
 FROM dbo.subscriptions WHERE plan_id = 3 )
SELECT ROUND(AVG(annual_date - trial_date),0)
AS avg_days_to_upgrade
FROM trial_plan tp
JOIN annual_plan ap
ON tp.customer_id = ap.customer_id;
```

Question 10:

Can you further breakdown this average value into 30-day periods? (i.e. 0–30 days, 31–60 days etc)

Query:

```
WITH trial_plan AS (
SELECT customer_id, start_date AS trial_date
FROM dbo.subscriptions WHERE plan_id = 0 ),
annual_plan AS (
SELECT customer_id, start_date AS annual_date
FROM dbo.subscriptions WHERE plan_id = 3 ),
bins AS (
SELECT WIDTH_BUCKET(ap.annual_date - tp.trial_date, 0, 360, 12) AS avg_days_to_upgrade
FROM trial_plan tp
JOIN annual_plan ap ON tp.customer_id = ap.customer_id)

SELECT ((avg_days_to_upgrade - 1) * 30 || ' - ' || (avg_days_to_upgrade) * 30) || ' days'
AS breakdown,
COUNT(*) AS customers
FROM bins
GROUP BY avg_days_to_upgrade
ORDER BY avg_days_to_upgrade
```

Question 11:

How many customers downgraded from a pro-monthly to a basic monthly plan in 2020?

Query:

```
WITH next_plan_cte AS (
SELECT customer_id, plan_id, start_date,
LEAD(plan_id, 1) OVER( PARTITION BY customer_id ORDER BY plan_id) AS next_plan
FROM dbo.subscriptions)

SELECT COUNT(*) AS downgraded
FROM next_plan_cte
WHERE start_date <= '2020-12-31' AND plan_id = 2 AND next_plan = 1;
```