Analyst SQL Questions

Consider the following relational database tables.

`subscription_activation`:

- `customer_id` (*integer*)
- `activation_time` (*timestamp*): When the customer activated or reactivated their subscription
- `is_first_activation` (*boolean*): Is this the customer's first activation or a reactivation?

`subscription_cancellation`:

- `customer_id` (*integer*)
- `cancellation_time` (*timestamp*): When the customer canceled their subscription
- `cancellation_reason` (*text*): Customer provided reason for canceling

`subscription_order`:

- `customer_id` (*integer*)
- `order_placed_at` (*timestamp*): When the order was billed to the customer
- `scheduled_delivery_date` (*date*): When the order is scheduled to be delivered
- `scheduled_ship_date` (*date*): When the order is scheduled to ship
- `order_value` (*float*): Cost of the order before discounts and refunds
- `order_servings` (int): Number of servings in the order
- `order_recipes` (int): Number of recipes in the order

`customer`:

- `id` (*integer*)
- `name` (*text*): The first and last name of a customer
- `zip_code` (*text*): The zip code or zip code+4 for a customer

The schema above describes a subscription which can be activated, deactivated, and reactivated at the customer's discretion. While customers are subscribed, they are eligible to receive orders for individual products.

Using the above tables and the corresponding table creation code in the file `customer_subscription_schema.sql`, please answer the questions below and provide the SQL code where applicable. We recommend using PostgresSQL as the sql dialect. You can set up your own db and use your own query runner or use an online sql editor (such as https://www.db-fiddle.com/) if you wish.

1. Group customers by their *first activation date*. For each group, summarize their total orders and their average order value.
2. Summarize *for each customer*: their most recent scheduled delivery date and the average number of days between their deliveries.
3. Which customers are *not currently subscribed*?
4. What zip codes (at the level of 5 digits) have had at least 3 deliveries in the past?
5. Which zipcodes have the longest waiting time for their orders?
6. Open Ended Question - What would you recommend to reduce churn and why? (i.e. back it up with data)