USE sql\_tasks;

SELECT \* FROM insurance;

-- 1. What are the top 5 patients who claimed the highest insurance amounts?

SELECT \*,DENSE\_RANK() OVER(ORDER BY claim DESC) FROM insurance LIMIT 5;

-- 2. What is the average insurance claimed by patients based on the

-- number of children they have?

SELECT children,avg\_claim FROM (SELECT \*,

AVG(claim) OVER(PARTITION BY children) AS avg\_claim,

ROW\_NUMBER() OVER(PARTITION BY children) AS row\_num

FROM insurance) t

WHERE t.row\_num = 1;

-- 3. What is the highest and lowest claimed amount by patients in each region?

SELECT region,min\_claim,max\_claim FROM (SELECT \*,

MIN(claim) OVER(PARTITION BY region) AS min\_claim,

MAX(claim) OVER(PARTITION BY region) AS max\_claim,

ROW\_NUMBER() OVER(PARTITION BY region) AS row\_num

FROM insurance) t

WHERE t.row\_num = 1;

-- 4. What is the percentage of smokers in each age group?

SELECT \* FROM insurance;

-- 5. What is the difference between the claimed amount of each

-- patient and the claimed amount of the first patient?

SELECT \*,

claim - FIRST\_VALUE(claim) OVER() AS diff

FROM insurance;

-- 6. For each patient, calculate the difference between their claimed amount

-- and the average claimed amount of patients with the same number of children.

SELECT \*,

claim - AVG(claim) OVER(PARTITION BY children)

FROM insurance;

-- 7. Show the patient with the highest BMI in each region and their

-- respective overall rank.

SELECT \* FROM (SELECT \*,

RANK() OVER(PARTITION BY region ORDER BY bmi DESC) AS group\_rank,

RANK() OVER(ORDER BY bmi DESC) AS overall\_rank

FROM insurance) t

WHERE t.group\_rank = 1;

-- 8. Calculate the difference between the claimed amount of each patient

-- and the claimed amount of the patient who has the highest BMI

-- in their region.

SELECT \*,

claim - FIRST\_VALUE(claim) OVER(PARTITION BY region ORDER BY bmi DESC)

FROM insurance;

-- 9. For each patient, calculate the difference in claim amount

-- between the patient and the patient with the highest claim amount

-- among patients with the and smoker status,

-- within the same region. Return the result in descending order difference.

SELECT \*,

(MAX(claim) OVER(PARTITION BY region,smoker) - claim) AS claim\_diff

FROM insurance

ORDER BY claim\_diff DESC;

-- 10. For each patient, find the maximum BMI value among their next three

-- records (ordered by age).

SELECT \*,

MAX(bmi) OVER(ORDER BY age ROWS BETWEEN 1 FOLLOWING AND 3 FOLLOWING)

FROM insurance;

-- 11. For each patient, find the rolling average of the last 2 claims.

SELECT \*,

AVG(claim) OVER(ROWS BETWEEN 2 PRECEDING AND 1 PRECEDING)

FROM insurance;

-- 12. Find the first claimed insurance value for male and female patients,

-- within each region order the data by patient age in ascending order,

-- and only include patients who are non-diabetic and have a bmi value

-- between 25 and 30.

WITH filtered\_data AS (

SELECT \* FROM insurance

WHERE diabetic = 'No' AND bmi BETWEEN 25 AND 30

)

SELECT region,gender,first\_claim FROM (SELECT \*,

FIRST\_VALUE(claim) OVER(PARTITION BY region,gender ORDER BY age) AS first\_claim,

ROW\_NUMBER() OVER(PARTITION BY region,gender ORDER BY age) AS row\_num

FROM filtered\_data) t

WHERE t.row\_num = 1