Query 1:

SELECT

date,

SUM(amount) OVER (ORDER BY date\_parse(date, '%m-%d-%y')) AS cumulative\_sales

FROM raw

WHERE year(date\_parse(date, '%m-%d-%y')) = 2022

LIMIT 10;

Query 2:

SELECT

COALESCE(NULLIF("ship-state", ''), 'Unknown') AS state,

SUM(

CASE

WHEN lower(status) IN ('cancelled','canceled','refunded','returned','return requested','refund initiated')

THEN -ABS(amount)

ELSE 0

END

) AS total\_negative\_profit

FROM raw

GROUP BY COALESCE(NULLIF("ship-state", ''), 'Unknown')

HAVING SUM(

CASE

WHEN lower(status) IN ('cancelled','canceled','refunded','returned','return requested','refund initiated')

THEN -ABS(amount)

ELSE 0

END

) < 0

ORDER BY total\_negative\_profit ASC

LIMIT 10;

Query 3:

SELECT

category,

sku AS sub\_category,

ROUND(AVG(rand() \* 0.3), 2) AS avg\_discount, -- simulate discount between 0%–30%

CAST(SUM(CAST(amount AS DOUBLE)) AS DOUBLE) AS total\_sales,

CAST(SUM(CAST(amount AS DOUBLE)) \* (1 - AVG(rand() \* 0.3)) AS DOUBLE) AS est\_profit,

(CAST(SUM(CAST(amount AS DOUBLE)) \* (1 - AVG(rand() \* 0.3)) AS DOUBLE) /

NULLIF(CAST(SUM(CAST(amount AS DOUBLE)) AS DOUBLE), 0)) AS profit\_ratio

FROM raw

GROUP BY category, sku

ORDER BY profit\_ratio DESC

LIMIT 10;

Query 4:

WITH ranked\_products AS (

SELECT

category,

sku AS product\_name,

CAST(SUM(CAST(amount AS DOUBLE) \* 0.25) AS DOUBLE) AS total\_profit,

RANK() OVER (PARTITION BY category ORDER BY SUM(CAST(amount AS DOUBLE) \* 0.25) DESC) AS rank\_in\_category

FROM raw

GROUP BY category, sku

)

SELECT

category,

product\_name,

total\_profit,

rank\_in\_category

FROM ranked\_products

WHERE rank\_in\_category <= 3

ORDER BY category, rank\_in\_category

LIMIT 10;

Query 5:

WITH monthly\_summary AS (

SELECT

date\_format(date\_parse(date, '%m-%d-%y'), '%Y-%m') AS month,

CAST(SUM(CAST(amount AS DOUBLE)) AS DOUBLE) AS total\_sales,

CAST(SUM(CAST(amount AS DOUBLE) \* 0.25) AS DOUBLE) AS total\_profit -- assume 25% margin

FROM raw

GROUP BY date\_format(date\_parse(date, '%m-%d-%y'), '%Y-%m')

)

SELECT

month,

total\_sales,

total\_profit,

ROUND(

((total\_sales - LAG(total\_sales) OVER (ORDER BY month)) /

NULLIF(LAG(total\_sales) OVER (ORDER BY month), 0)) \* 100, 2

) AS sales\_growth\_rate,

ROUND(

((total\_profit - LAG(total\_profit) OVER (ORDER BY month)) /

NULLIF(LAG(total\_profit) OVER (ORDER BY month), 0)) \* 100, 2

) AS profit\_growth\_rate

FROM monthly\_summary

ORDER BY month

LIMIT 10;