Q1- Which product categories generate the most revenue?

```
1        -- Which product categories generate the most revenue?
2 ●    SELECT
3            product_category,
4            SUM(revenue) AS Total_revenue
5        FROM
6            supply_chain
7        GROUP BY Product_category
8        ORDER BY Total_revenue DESC;
```

product_category	Total_revenue
skincare	241628.17
haircare	174455.42
cosmetics	161521.27

Q2- What are the top 5 best-selling products by units sold?

```
       -- What are the top 5 best-selling products by units sold?
●    SELECT
            product_category,
            Product_id,
            units_sold
        FROM
            supply_chain
        ORDER BY units_sold DESC
        LIMIT 5;
```

product_category	Product_id	units_sold
skincare	SKU10	996
cosmetics	SKU94	987
skincare	SKU9	980
skincare	SKU37	963
skincare	SKU36	963

Q3- What is the average unit price per product category?

```
1       -- What is the average unit price per product category?
2 •     SELECT
3           product_category,
4           ROUND(AVG(unit_price), 2) AS Avg_Price
5       FROM
6           supply_chain
7       GROUP BY Product_category;
```

product_category	Avg_Price
▶ haircare	46.01
skincare	47.26
cosmetics	57.36

Q4- Which suppliers have the shortest average lead times?

```
1       -- Which suppliers have the shortest average lead times?
2 •     SELECT
3           Supplier_name,
4           CONCAT(ROUND(AVG(Supplier_Lead_Time), 2),' ','days') AS Avg_Lead_Time
5       FROM
6           supply_chain
7       GROUP BY Supplier_name
8       ORDER BY Avg_Lead_Time;
```

Supplier_name	Avg_Lead_Time
▶ Supplier 1	14.78 days
Supplier 4	15.22 days
Supplier 5	18.06 days
Supplier 2	18.55 days
Supplier 3	20.13 days

Q5- What percentage of revenue is spent on shipping costs?

```
1       -- What percentage of revenue is spent on shipping costs?
2 •     SELECT
3           Product_category,
4           SUM(revenue) AS total_revenue,
5           SUM(shipping_cost) AS total_shipping_cost,
6           CONCAT(ROUND((SUM(shipping_cost) / SUM(revenue)) * 100,2),'%') AS shipping_cost_percentage
7       FROM
8           supply_chain
9       GROUP BY Product_category
10      ORDER BY shipping_cost_percentage;
```

Product_category	total_revenue	total_shipping_cost	shipping_cost_percentage
▶ skincare	241628.17	196.38	0.08%
cosmetics	161521.27	157.57	0.10%
haircare	174455.42	200.87	0.12%

Q6- Which suppliers have the highest defect rates?

```
1       -- Which suppliers have the highest defect rates?
2  •    SELECT
3           supplier_name,
4           ROUND(AVG(Defect_rate), 2) AS Avg_Defect_Rate
5       FROM
6           supply_chain
7       GROUP BY supplier_name
8       ORDER BY Avg_Defect_Rate;
```

supplier_name	Avg_Defect_Rate
▶ Supplier 1	1.80
Supplier 4	2.34
Supplier 2	2.36
Supplier 3	2.47
Supplier 5	2.67

Q7- How much stock is physically present vs available for sale?

```
1       -- How much stock is physically present vs available for sale?
2  •    SELECT
3           product_id,
4           units_available,
5           current_stock,
6           Current_stock - Units_available AS Non_Available_Stock
7       FROM
8           supply_chain;
```

product_id	units_available	current_stock	Non_Available_Stock
▶ SKU0	55	58	3
SKU1	95	53	-42
SKU2	34	1	-33
SKU3	68	23	-45
SKU4	26	5	-21
SKU5	87	90	3
SKU6	48	11	-37
SKU7	59	93	34
SKU8	78	5	-73
SKU9	35	14	-21
SKU10	11	51	40

Q8- Which products are at risk of stockouts?

```
1       -- Which products are at risk of stockouts?
2 •     SELECT
3           product_id,
4           units_available,
5           ROUND(AVG(order_quantity), 0) AS Avg_Orders
6       FROM
7           supply_chain
8       GROUP BY product_id , units_available
9       HAVING Units_available < 2 * (Avg_Orders);
```

product_id	units_available	Avg_Orders
SKU0	55	96
SKU2	34	88
SKU3	68	59
SKU4	26	56
SKU5	87	66
SKU6	48	58
SKU9	35	83
SKU10	11	80
SKU11	95	60
SKU12	41	85
SKU13	5	48

Q9- Which products are the most profitable after costs?

```
1       -- Which products are the most profitable after costs?
2 •     SELECT
3           product_id,
4           SUM(revenue) - (SUM(shipping_cost) + SUM(manufacturing_cost) + SUM(total_cost)) AS Net_Profits
5       FROM
6           supply_chain
7       GROUP BY product_id
8       ORDER BY Net_Profits DESC;
```

product_id	Net_Profits
SKU2	9397.09
SKU38	9337.48
SKU67	9288.32
SKU88	9268.84
SKU51	9152.52
SKU31	8982.83
SKU99	8935.07
SKU52	8815.06
SKU32	8774.09
SKU18	8739.74
SKU23	8560.51

Q10- What is the on-time delivery rate?

```
1       -- What is the on-time delivery rate?
2 •     SELECT
3           CONCAT(ROUND(COUNT(CASE
4                       WHEN shipping_duration <= Delivery_lead_time THEN 1
5                       END) * 100 / COUNT(*),2),'%') AS On_Time_Delivery_Rate
6       FROM
7           supply_chain;
```

On_Time_Delivery_Rate
▶ 83.00%

Q11- How do suppliers rank on overall performance?

```
1       -- How do suppliers rank on overall performance?
2 •     SELECT
3           Supplier_name,
4           ROUND(AVG(Supplier_Lead_Time), 2) AS Avg_Lead_Time,
5           ROUND(AVG(Defect_rate), 2) AS Avg_Defect,
6           ROUND(AVG(Manufacturing_cost), 2) AS Avg_Cost
7       FROM
8           supply_chain
9       GROUP BY Supplier_name;
```

Supplier_name	Avg_Lead_Time	Avg_Defect	Avg_Cost
▶ Supplier 3	20.13	2.47	43.63
Supplier 1	14.78	1.80	45.25
Supplier 5	18.06	2.67	44.77
Supplier 4	15.22	2.34	62.71
Supplier 2	18.55	2.36	41.62