1. Cleaning data

```
--Cleaning data
SELECT
  TO_DATE(DATE, 'DD/MM/YYYY') AS sales_date,
  TO_NUMBER(REPLACE(SALES, ',', '.')) AS sales,
  TO_NUMBER(REPLACE(COST_OF_SALES, ',', '.')) AS cost_of_sales,
  TO_NUMBER(REPLACE(QUANTITY_SOLD, ',', '.')) AS quantity_sold
FROM sales;
```

Results | Chart

	SALES_DATE	SALES	COST_OF_SALES	QUANTITY_SOLD
1	2013-12-30	223938	230080	6827
2	2013-12-31	300345	306986	9268
3	2014-01-01	86782	87986	2678
4	2014-01-02	200173	202881	6175
5	2014-01-03	326906	333806	10084
6	2014-01-04	307044	313652	9470
7	2014-01-05	179189	183083	5524
8	2014-01-06	306352	313446	9448

2. Creating temp table to work on

```
CREATE OR REPLACE TEMP TABLE cleaned_sales AS
SELECT
  TO_DATE(DATE, 'DD/MM/YYYY') AS sales_date,
  TO_NUMBER(REPLACE(SALES, ',', '.')) AS sales,
  TO_NUMBER(REPLACE(COST_OF_SALES, ',', '.')) AS cost_of_sales,
  TO_NUMBER(REPLACE(QUANTITY_SOLD, ',', '.')) AS quantity_sold
FROM sales;
```

Results | Chart

	SALES_DATE	SALES	COST_OF_SALES	QUANTITY_SOLD
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6	2014-01-04	307044	313652	9470
7	2014-01-05	179189	183083	5524
8	2014-01-06	306352	313446	9448
9	2014-01-07	224020	229534	6911
10	2014-01-08	101836	99382	2990
11	2014-01-09	107804	104816	3159
12	2014-01-10	144830	141334	4246

3. Calculating Metrics:
   a. Daily price per unit=$\frac{Total\ sales}{Total\ quantity\ sold}$

```
--Q1: daily price per unit
SELECT
  sales_date,
  ROUND(sales / quantity_sold, 0) AS daily_price_per_unit
FROM cleaned_sales
WHERE quantity_sold != 0;
```

Results | Chart

	SALES_DATE	DAILY_PRICE_PER_UNIT
1	2013-12-30	33
2	2013-12-31	32
3	2014-01-01	32
4	2014-01-02	32
5	2014-01-03	32
6	2014-01-04	32
7	2014-01-05	32
8	2014-01-06	32
9	2014-01-07	32
10	2014-01-08	34
11	2014-01-09	34

   b. Average unit sales price= $\frac{Product\ revenue}{Total\ quantity\ sold}$

```
SELECT
  ROUND(SUM(sales) / SUM(quantity_sold), 0) AS avg_price_per_unit
FROM cleaned_sales;
```

Results | Chart

	AVG_PRICE_PER_UNIT
1	35

c. Daily % gross profit= $\frac{Total\ sales - Total\ cost\ of\ sales}{Total\ sales} \times 100$

```
SELECT
  sales_date,
  TO_CHAR(ROUND(((sales - cost_of_sales) / sales) * 100, 2)) || '%' AS daily_gross_profit_percent
FROM cleaned_sales
WHERE sales != 0;
```

Results | Chart

	SALES_DATE	DAILY_GROSS_PROFIT_PERCENT
1	2013-12-30	-2.74%
2	2013-12-31	-2.21%
3	2014-01-01	-1.39%
4	2014-01-02	-1.35%
5	2014-01-03	-2.11%
6	2014-01-04	-2.15%
7	2014-01-05	-2.17%
8	2014-01-06	-2.32%
9	2014-01-07	-2.46%
10	2014-01-08	2.41%
11	2014-01-09	2.77%
12	2014-01-10	2.41%
13	2014-01-11	2.31%

d. Daily % gross profit per unit= $\frac{Daily\ gross\ profit}{Total\ quantity\ sold} \times 100$

```
SELECT
  sales_date,
  ROUND(((sales - cost_of_sales) / quantity_sold) * 100, 2) || '%' AS gross_profit_per_unit
FROM cleaned_sales
WHERE quantity_sold != 0;
```

Results | Chart

	SALES_DATE	GROSS_PROFIT_PER_UNIT
1	2013-12-30	-89.97%
2	2013-12-31	-71.66%
3	2014-01-01	-44.96%
4	2014-01-02	-43.85%
5	2014-01-03	-68.43%
6	2014-01-04	-69.78%
7	2014-01-05	-70.49%
8	2014-01-06	-75.08%
9	2014-01-07	-79.79%
10	2014-01-08	82.07%
11	2014-01-09	94.59%
12	2014-01-10	82.34%
13	2014-01-11	78.92%

e. Price Elasticity of Demand= $\frac{\%\ change\ in\ quantity}{\%\ change\ in\ price} \times 100$

Promotions/ specials are noted by the top highest sales over the period.

```
SELECT
  sales_date,
  sales,
  cost_of_sales,
  quantity_sold
FROM cleaned_sales
ORDER BY sales DESC
LIMIT 3;
```

Results | Chart

	SALES_DATE	SALES	COST_OF_SALES	QUANTITY_SOLD
1	2014-03-01	846678	872082	26410
2	2014-08-30	717097	797789	23310
3	2015-04-02	715032	777522	18936

```
WITH TopSales AS (
  SELECT
    sales_date AS period,
    SUM(sales) AS total_sales,
    SUM(quantity_sold) AS total_quantity_sold,
    ROUND(SUM(sales) / NULLIF(SUM(quantity_sold), 0), 2) AS price_per_unit
  FROM cleaned_sales
  GROUP BY sales_date
  ORDER BY total_sales DESC
  LIMIT 3
)
SELECT
  T1.period AS period_1,
  T2.period AS period_2,

  ROUND(((T2.total_quantity_sold - T1.total_quantity_sold) / NULLIF(T1.total_quantity_sold, 0)) * 100, 2) AS percent_change_quantity,
  ROUND(((T2.price_per_unit - T1.price_per_unit) / NULLIF(T1.price_per_unit, 0)) * 100, 2) AS percent_change_price,

  ROUND(
    (
      ((T2.total_quantity_sold - T1.total_quantity_sold) / NULLIF(T1.total_quantity_sold, 0)) /
      NULLIF((T2.price_per_unit - T1.price_per_unit) / NULLIF(T1.price_per_unit, 0), 0)
    ), 2
  ) AS price_elasticity_demand

FROM TopSales T1
JOIN TopSales T2 ON T1.period < T2.period
ORDER BY period_1;
```

Results | Chart

	PERIOD_1	PERIOD_2	PERCENT_CHANGE_QUANTITY	PERCENT_CHANGE_PRICE	PRICE_ELASTICITY_DEMAND
1	2014-03-01	2014-08-30	-11.74	-4.05	2.89
2	2014-03-01	2015-04-02	-28.30	17.78	-1.59
3	2014-08-30	2015-04-02	-18.76	22.76	-0.82