

## Complete Answer Sheet for SQL Project Requirements

### Project 1: Basic Sales Reporting

1. Total sales, total quantity, and total profit for the entire year:

```
SELECT  
  
    YEAR(order_date) AS order_year,  
  
    SUM(total_sales) AS total_sales,  
  
    SUM(quantity) AS total_quantity,  
  
    SUM(profit) AS total_profit  
  
FROM dbo.DWSales  
  
GROUP BY YEAR(order_date);
```

2. Summary table showing total sales by month:

```
SELECT  
  
    YEAR(order_date) AS order_year,  
  
    MONTH(order_date) AS order_month,  
  
    SUM(total_sales) AS total_sales  
  
FROM dbo.DWSales  
  
GROUP BY YEAR(order_date), MONTH(order_date)  
  
ORDER BY YEAR(order_date), MONTH(order_date);
```

3. Breakdown of total sales by product category and sub-category:

```
SELECT  
  
    category,  
  
    sub_category,
```

```
SUM(total_sales) AS total_sales  
  
FROM dbo.DWSales  
  
GROUP BY category, sub_category  
  
ORDER BY total_sales DESC;
```

## Project 2: Customer Segmentation

1. Customer profiles summarizing total sales and profit per customer:

```
SELECT  
  
    customer_id,  
  
    customer_name,  
  
    SUM(total_sales) AS total_sales,  
  
    SUM(profit) AS total_profit  
  
FROM dbo.DWSales  
  
GROUP BY customer_id, customer_name;
```

2. Group customers by market segment:

```
SELECT  
  
    market_segment,  
  
    COUNT(DISTINCT customer_id) AS total_customers,  
  
    AVG(total_sales) AS avg_sales_per_customer,  
  
    SUM(profit) AS total_profit  
  
FROM dbo.DWSales  
  
GROUP BY market_segment;
```

3. Top 10 customers by total sales and their regions:

```
SELECT

    TOP 10 customer_id,

    customer_name,

    region,

    SUM(total_sales) AS total_sales

FROM dbo.DWSales

GROUP BY customer_id, customer_name, region

ORDER BY total_sales DESC;
```

4. Most popular products in each market segment:

```
SELECT

    market_segment,

    product_name,

    COUNT(order_id) AS product_count

FROM dbo.DWSales

GROUP BY market_segment, product_name

ORDER BY product_count DESC;
```

5. Customer purchasing frequency (e.g., more than 3 purchases):

```
SELECT

    customer_id,

    customer_name,

    COUNT(order_id) AS order_count

FROM dbo.DWSales

GROUP BY customer_id, customer_name
```

HAVING COUNT(order\_id) > 3;

### Project 3: Sales Performance Dashboard

1. Total sales, profit, and quantity sold for the current month compared to the previous month:

SELECT

YEAR(order\_date) AS order\_year,

MONTH(order\_date) AS order\_month,

SUM(total\_sales) AS total\_sales,

SUM(profit) AS total\_profit,

SUM(quantity) AS total\_quantity

FROM dbo.DWSales

WHERE order\_date BETWEEN DATEADD(MONTH, -1, GETDATE()) AND GETDATE()

GROUP BY YEAR(order\_date), MONTH(order\_date);

2. Breakdown of sales by region and market segment:

SELECT

region,

market\_segment,

SUM(total\_sales) AS total\_sales

FROM dbo.DWSales

GROUP BY region, market\_segment

ORDER BY total\_sales DESC;

3. KPIs for AOV, CLV, and profit margin:

-- Average Order Value (AOV):

```
SELECT  
  
    AVG(total_sales) AS avg_order_value  
  
FROM dbo.DWSales;
```

-- Customer Lifetime Value (CLV):

```
SELECT  
  
    customer_id,  
  
    customer_name,  
  
    SUM(profit) AS customer_lifetime_value  
  
FROM dbo.DWSales  
  
GROUP BY customer_id, customer_name;
```

-- Profit Margin:

```
SELECT  
  
    (SUM(profit) / SUM(total_sales)) AS profit_margin  
  
FROM dbo.DWSales;
```

4. Track sales growth month-over-month:

```
SELECT  
  
    YEAR(order_date) AS order_year,  
  
    MONTH(order_date) AS order_month,  
  
    SUM(total_sales) AS total_sales,  
  
    LAG(SUM(total_sales)) OVER (ORDER BY YEAR(order_date), MONTH(order_date)) AS  
previous_month_sales,  
  
    (SUM(total_sales) - LAG(SUM(total_sales)) OVER (ORDER BY YEAR(order_date),
```

```
MONTH(order_date))) / LAG(SUM(total_sales)) OVER (ORDER BY YEAR(order_date),  
MONTH(order_date)) AS month_over_month_growth  
FROM dbo.DWSales  
GROUP BY YEAR(order_date), MONTH(order_date);
```

...

Complete answers continue for each project up to Project 10. All queries included.