1.

```
/* Create temporary table using WITH clause and LEFT JOIN that contain the contact name and customer spending */
WITH tmp AS (SELECT ContactName, IFNULL(SUM(Quantity * UnitPrice), 0) AS Customer_Spending
/* Customer Spending is calculated by using the sum of quantity and unitprice, and it returned 0 if either does not exist. */
FROM customers AS c
LEFT JOIN orders AS o ON o.CustomerID = c.CustomerID
LEFT JOIN orderdetails AS od ON o.OrderID = od.OrderID
GROUP BY ContactName) /*without GROUP BY cluase, it returns all sum of spending of customers*/

SELECT ContactName, ROUND(AVG(Customer_Spending), 3) AS Customer_Spending,
CASE
        WHEN Customer_Spending >= (SELECT AVG(Customer_Spending) FROM tmp) THEN 'High Sales Potential' /*require subquery to meet the condition*/
        ELSE 'Average Sales Potential'
END AS Customer_Sales_Potential
FROM tmp
GROUP BY ContactName; /*without GROUP BY clause, it failed the query because tmp table already employed GROUP BY clause*/
```

2.

2-1)

```
SELECT ProductName, IFNULL((UnitPrice | Quantity), 0) AS bitwise_or
FROM orderdetails AS od
LEFT JOIN (SELECT ProductID, ProductName FROM products) AS p ON od.ProductID = p.ProductID;
```

2-2)

```
SELECT ProductName, IFNULL((UnitPrice & Quantity), 0) AS bitwise_and
FROM orderdetails AS od
LEFT JOIN (SELECT ProductID, ProductName FROM products) AS p ON od.ProductID = p.ProductID;
```

2-3)

```
SELECT ProductName, IFNULL((UnitPrice * Quantity), 0) AS product_of_price_quantity
FROM orderdetails AS od
LEFT JOIN (SELECT ProductID, ProductName FROM products) AS p ON od.ProductID = p.ProductID;
```

2-4)

```
SELECT ProductName, IFNULL((UnitPrice + Quantity), 0) AS sum
FROM orderdetails AS od
```

```
LEFT JOIN (SELECT ProductID, ProductName FROM products) AS p ON od.ProductID = p.ProductID;

/*Just in case whole sum of product by productname*/
SELECT ProductName, IFNULL(SUM(UnitPrice * Quantity), 0) AS sum
FROM orderdetails AS od
LEFT JOIN (SELECT ProductID, ProductName FROM products) AS p ON od.ProductID = p.ProductID
GROUP BY ProductName;
```

2-5)

```
SELECT ProductName, IFNULL(MOD(UnitPrice, Quantity), 0) AS modulus
FROM orderdetails AS od
LEFT JOIN (SELECT ProductID, ProductName FROM products) AS p ON od.ProductID = p.ProductID;
```

2-6)

```
SELECT ProductName, IFNULL((UnitPrice DIV Quantity), 0) AS division
FROM orderdetails AS od
LEFT JOIN (SELECT ProductID, ProductName FROM products) AS p ON od.ProductID = p.ProductID;
```

2) All in one table =>

```
SELECT ProductName,
        IFNULL((UnitPrice | Quantity), 0) as "Or",
        IFNULL((UnitPrice & Quantity), 0) as "And",
        IFNULL(MOD(UnitPrice,Quantity), 0) as "Modulus",
        IFNULL((UnitPrice + Quantity), 0) as "summation",
        IFNULL((UnitPrice * Quantity), 0) as "product",
        IFNULL((UnitPrice/Quantity), 0) as "division"
FROM orderdetails AS od
LEFT JOIN (SELECT ProductID, ProductName FROM products) AS p ON od.ProductID = p.ProductID
```