WHERE Clause Problem Set

Use the AdventureWorks2014 database

1. Write a query that returns the ProductID, Name, Color, and Size from the Production.Products table.
    a. Only if there is a color filled in
    b. Only if both the color and size are filled in
    c. Only if color and size are not filled in
    d. If at least one of them (color or size) is filled in
2. Write a query that returns the SalesOrderID, CustomerID, OrderDate and TotalDue from the Sales.SalesOrderHeader table
    a. For orders placed in 2011
    b. For orders placed in 2011 and 2012
    c. For CustomerID 11001 and orders placed in 2014
    d. For CustomerID 11001, 11002, and 11003
    e. For orders that have a TotalDue more than $1000
    f. For orders that have a TotalDue at least $1000
    g. Displaying the highest TotalDue first
3. Write a query that returns the BusinessEntityID, FirstName, MiddleName, LastName from the Person.Person table
    a. With a FirstName starting with K.
    b. With z anywhere in their name (first, middle or last)
    c. With a LastName of Morgan and the FirstName of Abigail or Alexandra
    d. With the FirstName, MiddleName, and LastName combined to make a FullName column.
    e. With all the FirstName values starting with T to the end of the list
    f. Only the rows in the email promotion list

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--Problem set
--1 A
SELECT ProductID, Name, Color, Size
FROM Production.Product
WHERE Color IS NOT NULL;

--1 B
SELECT ProductID, Name, Color, Size
FROM Production.Product
WHERE Color IS NOT NULL AND Size IS NOT NULL;

--Alternate
SELECT ProductID, Name, Color, Size
FROM Production.Product
WHERE Color + Size IS NOT NULL;

--1 C
SELECT ProductID, Name, Color, Size
FROM Production.Product
WHERE Color IS NULL AND Size IS NULL;

--Alternate
SELECT ProductID, Name, Color, Size
FROM Production.Product
WHERE COALESCE(Color,Size) IS NULL;

--1 D
SELECT ProductID, Name, Color, Size
FROM Production.Product
```

```
WHERE Color IS NOT NULL OR Size IS NOT NULL;

--2 A
--Works since no time recorded
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
WHERE OrderDate BETWEEN '1/1/2011' AND '12/31/2011';

--Alternate (better!)
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
WHERE OrderDate >= '1/1/2011' AND OrderDate < '1/1/2012';

--Alternate (easy but sometime bad for performance)
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
WHERE YEAR(OrderDate) = 2011;

--2 B
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
WHERE OrderDate BETWEEN '1/1/2011' AND '12/31/2012';

--Alternate (better!)
SELECT SalesOrderID, CustomerID, OrderDate,
```

```
        TotalDue
FROM Sales.SalesOrderHeader
WHERE OrderDate >= '1/1/2011' AND OrderDate < '1/1/2013';


--Alternate (easy but sometime bad for performance)
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
WHERE YEAR(OrderDate) IN (2011, 2012);

--2 C
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
WHERE CustomerID = 11001 AND
        OrderDate BETWEEN '1/1/2014' AND '12/31/2014';

--Alternate (better!)
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
WHERE CustomerID = 11001 AND
        OrderDate >= '1/1/2014' AND OrderDate < '1/1/2015';

--Alternate (easy but can cause performance problems)
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
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```
WHERE CustomerID = 11001 AND
        YEAR(OrderDate) = 2014;


--2 D
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
WHERE CustomerID IN (11001,11002,11003);

--Alternate
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
WHERE CustomerID = 11001
        OR CustomerID = 11002
        OR CustomerID = 11003;

--Alternate, since there are no gaps
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
WHERE CustomerID BETWEEN 11001 AND 11003;

--2 E
SELECT SalesOrderID, CustomerID, OrderDate,
        TotalDue
FROM Sales.SalesOrderHeader
WHERE TotalDue > 1000;
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```
--2 F
SELECT SalesOrderID, CustomerID, OrderDate,
	TotalDue
FROM Sales.SalesOrderHeader
WHERE TotalDue >= 1000;

--2 G
SELECT SalesOrderID, CustomerID, OrderDate,
	TotalDue
FROM Sales.SalesOrderHeader
ORDER BY TotalDue DESC;

--3 A
SELECT BusinessEntityID, FirstName, MiddleName,
	LastName
FROM Person.Person
WHERE FirstName LIKE 'K%';

--Alternate, but we haven't covered this yet
SELECT BusinessEntityID, FirstName, MiddleName,
	LastName
FROM Person.Person
WHERE LEFT(FirstName,1) =  'K';

--3 B
SELECT BusinessEntityID, FirstName, MiddleName,
	LastName
FROM Person.Person
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```
WHERE FirstName LIKE '%z%'
        OR MiddleName LIKE '%z%'
        OR LastName LIKE '%z%';

--Alternate (we haven't covered this yet)
SELECT BusinessEntityID, FirstName, MiddleName,
        LastName
FROM Person.Person
WHERE CONCAT(FirstName,MiddleName,LastName) LIKE '%z%';

--3 C
SELECT BusinessEntityID, FirstName, MiddleName,
        LastName
FROM Person.Person
WHERE LastName = 'Morgan'
        AND (FirstName = 'Abigail' OR FirstName = 'Alexandra');

--Alternate
SELECT BusinessEntityID, FirstName, MiddleName,
        LastName
FROM Person.Person
WHERE LastName = 'Morgan'
        AND FIRSTNAME IN ('Abigail','Alexandra');

--3 D
SELECT BusinessEntityID, FirstName, MiddleName, LastName,
        FirstName + ' ' + ISNULL(MiddleName,'') + ' ' + LastName AS FullName
FROM Person.Person;
```

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--Alternate, removes the extra space when Middlename is null
SELECT BusinessEntityID, FirstName, MiddleName, LastName,
        FirstName  + ISNULL(' ' + MiddleName,'') + ' ' + LastName AS FullName
FROM Person.Person;

--3 F
SELECT BusinessEntityID, FirstName, MiddleName,
        LastName
FROM Person.Person
WHERE FirstName > 'T';

--3 G
SELECT BusinessEntityID, FirstName, MiddleName,
        LastName
FROM Person.Person
WHERE EmailPromotion = 1;
```

Problem Set Answers

1.