1. SELECT table_schema, table_name, table_rows
   FROM information_schema.tables;

TABLE_SCHEMA	TABLE_NAME	TABLE_ROWS
aw	DimAccount	99
aw	DimCurrency	0
aw	DimCustomer	18356
aw	DimDepartmentGroup	7
aw	DimEmployee	296
aw	DimGeography	655
aw	DimOrganization	14
aw	DimProduct	158
aw	DimProductCategory	4
aw	DimProductSubcategory	37
aw	DimPromotion	16
aw	DimReseller	701
aw	DimSalesReason	10
aw	DimSalesTerritory	11
aw	DimScenario	3
aw	DimTime	1158
aw	FactCurrencyRate	0
aw	FactFinance	38480
aw	FactInternetSales	59800

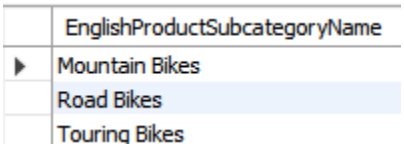
2. SELECT distinct table_schema, table_name, column_key
   FROM information_schema.columns;

TABLE_SCHEMA	TABLE_NAME	COLUMN_KEY
aw	DimAccount	
aw	DimAccount	PRI
aw	DimAccount	MUL
aw	DimCurrency	
aw	DimCurrency	PRI
aw	DimCustomer	
aw	DimCustomer	PRI
aw	DimCustomer	MUL
aw	DimDepartmentGroup	PRI
aw	DimDepartmentGroup	
aw	DimDepartmentGroup	MUL
aw	DimEmployee	
aw	DimEmployee	PRI
aw	DimEmployee	MUL
aw	DimGeography	
aw	DimGeography	PRI
aw	DimGeography	MUL
aw	DimOrganization	
aw	DimOrganization	PRI
aw	DimOrganization	MUL
aw	DimProduct	
aw	DimProduct	PRI
aw	DimProduct	MUL
aw	DimProductCategory	
aw	DimProductCategory	PRI
aw	DimProductSubcateg...	
aw	DimProductSubcateg...	MUL
aw	DimProductSubcateg...	PRI
aw	DimPromotion	
aw	DimPromotion	PRI
aw	DimReseller	
aw	DimReseller	MUL
aw	DimReseller	PRI
aw	DimSalesReason	
aw	DimSalesReason	PRI
aw	DimSalesTerritory	
aw	DimSalesTerritory	PRI
aw	DimScenario	PRI
aw	DimScenario	
aw	DimTime	
aw	DimTime	PRI
aw	FactCurrencyRate	
aw	FactCurrencyRate	MUL
aw	FactFinance	MUL
aw	FactFinance	
aw	FactInternetSales	
aw	FactInternetSales	MUL
aw	FactInternetSales	PRI

3. The standard table naming convention that AdventureWorksDW designers used when naming their tables was “CamelCase”. The designers added “Dim” at the beginning of the dimension table names and added “fact” at the beginning of the fact table names so we knew what type of table they are.

4. The purpose of the recursive relationship on DimEmployee was to allow the data warehouse to store the relationship between bosses and their employees as well as the other way around.

5. use aw;
   SELECT distinct EnglishProductSubcategoryName
   FROM DimProduct p, FactInternetSales s, DimProductSubcategory c
   where p.ProductKey = s.ProductKey and p.ProductSubcategoryKey = c.ProductSubcategoryKey



	EnglishProductSubcategoryName
▶	Mountain Bikes
	Road Bikes
	Touring Bikes

6.

```
use aw;

Select distinct P.Color, D.CalendarYear, sum(F.OrderQuantity) as 'sum'

from FactInternetSales F, DimProduct P, DimTime D

where D.CalendarYear = '2001' and F.ProductKey = P.ProductKey and

        P.ProductSubcategoryKey < 4

group by P.Color

order by sum desc;


Select distinct P.Color, D.CalendarYear, sum(F.OrderQuantity) as 'sum'

from FactInternetSales F, DimProduct P, DimTime D

where D.CalendarYear = '2002' and F.ProductKey = P.ProductKey and

        P.ProductSubcategoryKey < 4

group by P.Color

order by sum desc;
```

```
Select distinct P.Color, D.CalendarYear, sum(F.OrderQuantity) as 'sum'
from FactInternetSales F, DimProduct P, DimTime D
where D.CalendarYear = '2003' and F.ProductKey = P.ProductKey and
        P.ProductSubcategoryKey < 4
group by P.Color
order by sum desc;
```

```
Select distinct P.Color, D.CalendarYear, sum(F.OrderQuantity) as 'sum'
from FactInternetSales F, DimProduct P, DimTime D
where D.CalendarYear = '2004' and F.ProductKey = P.ProductKey and
        P.ProductSubcategoryKey < 4
group by P.Color
order by sum desc;
```

2001:

Color	CalendarYear	sum
Black	2001	976856
Yellow	2001	589352
Red	2001	500296
Silver	2001	495144
Blue	2001	236072

2002:

Color	CalendarYear	sum
Black	2002	1937785
Yellow	2002	1169095
Red	2002	992435
Silver	2002	982215
Blue	2002	468295

2003:

	Color	CalendarYear	sum
▶	Black	2003	1937785
	Yellow	2003	1169095
	Red	2003	992435
	Silver	2003	982215
	Blue	2003	468295

2004:

	Color	CalendarYear	sum
▶	Black	2004	1295396
	Yellow	2004	781532
	Red	2004	663436
	Silver	2004	656604
	Blue	2004	313052

The most popular color of bike sold in 2001 was "**Black**" with 976,856 black bikes sold.

The most popular color of bike sold in 2002 was "**Black**" with 1,937,785 black bikes sold.

The most popular color of bike sold in 2003 was "**Black**" with 1,937,785 black bikes sold.

The most popular color of bike sold in 2004 was "**Black**" with 1,295,396 black bikes sold.

7.

```
use aw;
SELECT G.StateProvinceName, D.CalendarYear, sum(F.SalesAmount) as 'Sum'
FROM FactInternetSales F, DimCustomer C, DimGeography G, DimProduct P, DimTime D
Where D.CalendarYear = '2001' and F.ProductKey = P.ProductKey and
        F.CustomerKey = C.CustomerKey And G.GeographyKey = C.GeographyKey And
        P.ProductSubcategoryKey < 4
group by G.StateProvinceName
order by Sum desc
limit 4;

SELECT G.StateProvinceName, D.CalendarYear, sum(F.SalesAmount) as 'Sum'
```

```
FROM FactInternetSales F, DimCustomer C, DimGeography G, DimProduct P, DimTime D

Where D.CalendarYear = '2002' and F.ProductKey = P.ProductKey and

        F.CustomerKey = C.CustomerKey And G.GeographyKey = C.GeographyKey And
        P.ProductSubcategoryKey < 4

group by G.StateProvinceName

order by Sum desc

limit 4;


SELECT G.StateProvinceName, D.CalendarYear, sum(F.SalesAmount) as 'Sum'

FROM FactInternetSales F, DimCustomer C, DimGeography G, DimProduct P, DimTime D

Where D.CalendarYear = '2003' and F.ProductKey = P.ProductKey and

        F.CustomerKey = C.CustomerKey And G.GeographyKey = C.GeographyKey And
        P.ProductSubcategoryKey < 4

group by G.StateProvinceName

order by Sum desc

limit 4;


SELECT G.StateProvinceName, D.CalendarYear, sum(F.SalesAmount) as 'Sum'

FROM FactInternetSales F, DimCustomer C, DimGeography G, DimProduct P, DimTime D

Where D.CalendarYear = '2004' and F.ProductKey = P.ProductKey and

        F.CustomerKey = C.CustomerKey And G.GeographyKey = C.GeographyKey And
        P.ProductSubcategoryKey < 4

group by G.StateProvinceName

order by Sum desc

limit 4;
```

2001:

StateProvinceName	CalendarYear	Sum
California	2001	1010160000.00
New South Wales	2001	707221480.00
England	2001	604002816.00
Washington	2001	432996896.00

2002:

StateProvinceName	CalendarYear	Sum
California	2002	2003850000.00
New South Wales	2002	1402912175.00
England	2002	1198157760.00
Washington	2002	858934060.00

2003:

StateProvinceName	CalendarYear	Sum
California	2003	2003850000.00
New South Wales	2003	1402912175.00
England	2003	1198157760.00
Washington	2003	858934060.00

2004:

StateProvinceName	CalendarYear	Sum
California	2004	1339560000.00
New South Wales	2004	937837180.00
England	2004	800960256.00
Washington	2004	574191536.00

The 4 state/provinces that showed the highest sales volume for each of the years 2001-2004 were California, New South Wales, England, and Washington for all 4 years.

8.

```
use aw;

Select distinct P.EnglishProductName, D.CalendarYear, sum(F.UnitPrice -
F.ProductStandardCost) as "Margin"

from FactInternetSales F, DimProduct P, DimTime D

where D.CalendarYear = '2002' and F.ProductKey = P.ProductKey and

        P.ProductSubcategoryKey < 4

group by P.EnglishProductName

order by Margin desc;
```

EnglishProductName	CalendarYear	Margin
Mountain-200 Black, 46	2002	228694400.00
Mountain-200 Black, 42	2002	226921230.00
Mountain-200 Silver, 38	2002	222872650.00
Mountain-200 Silver, 46	2002	216532965.00
Mountain-200 Black, 38	2002	215505490.00
Mountain-200 Silver, 42	2002	209244280.00
Road-150 Red, 48	2002	173068035.00
Road-150 Red, 62	2002	172554480.00
Road-150 Red, 52	2002	155093610.00
Road-150 Red, 56	2002	151498725.00
Road-150 Red, 44	2002	144308955.00
Road-250 Black, 52	2002	101699220.00
Road-250 Red, 58	2002	97485660.00
Road-250 Black, 48	2002	95198205.00
Road-250 Black, 44	2002	86565225.00
Road-250 Black, 58	2002	86093280.00
Touring-1000 Blue, 46	2002	58273710.00
Touring-1000 Yellow, 46	2002	56627560.00
Road-350-W Yellow, 40	2002	55490220.00
Road-250 Red, 48	2002	54636120.00
Road-350-W Yellow, 42	2002	53008950.00
Touring-1000 Blue, 54	2002	52676800.00
Road-350-W Yellow, 48	2002	52332240.00
Touring-1000 Yellow, 54	2002	52018340.00
Touring-1000 Yellow, 50	2002	49713730.00
Touring-1000 Blue, 50	2002	49384500.00
Road-350-W Yellow, 44	2002	48723120.00
Road-250 Red, 44	2002	48565440.00
Touring-1000 Blue, 60	2002	48396810.00
Touring-1000 Yellow, 60	2002	46092200.00
Road-550-W Yellow, 42	2002	45130425.00
Road-250 Red, 52	2002	44855580.00
Road-550-W Yellow, 44	2002	42269920.00
Road-550-W Yellow, 38	2002	39768210.00
Road-550-W Yellow, 40	2002	39197715.00
Road-550-W Yellow, 48	2002	38431215.00
Mountain-100 Black, 44	2002	32346300.00
Mountain-100 Silver, 38	2002	31500960.00
Mountain-100 Black, 48	2002	30728985.00
Road-750 Black, 52	2002	27614440.00
Mountain-100 Silver, 44	2002	26612880.00
Mountain-100 Black, 38	2002	26416145.00
Road-750 Black, 48	2002	25969020.00
Road-750 Black, 44	2002	25754400.00
Mountain-100 Black, 42	2002	24259725.00
Road-750 Black, 58	2002	23894360.00
Mountain-100 Silver, 42	2002	22811040.00
Mountain-100 Silver, 48	2002	19552320.00
Mountain-400-W Silver...	2002	18852980.00

The “Mountain-200 Black, 46” yielded the highest margin for AdventureWorks in the year 2002. You can tell this because I ordered the table by the highest margin on top then descending order from there and the “Mountain-200 Black, 46” is the top model on the table.