

1

```
SELECT EXTRACT(YEAR from saledate) AS year_num,  
EXTRACT(MONTH from saledate) AS month_num,  
COUNT(DISTINCT saledate)  
FROM trnsact  
GROUP BY year_num, month_num  
ORDER BY year_num, month_num;
```

2

```
SELECT EXTRACT(YEAR from saledate), EXTRACT(MONTH from saledate), store,  
COUNT(saledate) AS num  
FROM transact  
GROUP BY EXTRACT(YEAR from saledate), EXTRACT(MONTH from saledate), store  
ORDER BY num;
```

3

```
SELECT TOP 5 sku, SUM(CASE  
WHEN EXTRACT(MONTH from saledate)=6 THEN amt  
WHEN EXTRACT(MONTH from saledate)=7 THEN amt  
WHEN EXTRACT(MONTH from saledate)=8 THEN amt  
END) AS total  
FROM trnsact  
WHERE stype = 'p'  
GROUP BY sku  
ORDER BY total DESC
```

4a

```
SELECT EXTRACT(YEAR from saledate), EXTRACT(MONTH from saledate), store,  
SUM(amt)/COUNT(DISTINCT saledate) AS num  
FROM trnsact  
WHERE stype = 'p'  
GROUP BY EXTRACT(YEAR from saledate), EXTRACT(MONTH from saledate), store  
ORDER BY EXTRACT(YEAR from saledate) DESC, EXTRACT(MONTH from saledate) DESC,  
store;
```

4b

```
SELECT EXTRACT(YEAR from saledate), EXTRACT(MONTH from saledate), store, (SUM(CASE  
WHEN (EXTRACT(YEAR from saledate)=2005 AND EXTRACT(MONTH from saledate)=8)  
THEN NULL  
ELSE amt  
END)/COUNT(DISTINCT saledate)) AS average_sale  
FROM trnsact  
WHERE stype = 'p'  
GROUP BY EXTRACT(YEAR from saledate), EXTRACT(MONTH from saledate), store  
HAVING average_sale IS NOT NULL  
ORDER BY EXTRACT(YEAR from saledate), EXTRACT(MONTH from saledate), store
```

4c (sub)

```
SELECT
EXTRACT(YEAR from saledate) AS year_sale,
EXTRACT(MONTH from saledate) AS month_sale,
store,
COUNT(DISTINCT saledate) AS num_saledate,
SUM(amt) AS total
FROM trnsact
WHERE saledate < '2005-08-01'
AND stype = 'p'
GROUP BY year_sale, month_sale, store
HAVING num_saledate >= 20
```

4c

```
SELECT
year_sale || month_sale || store,
total/num_saledate AS average_sale

FROM
(SELECT
EXTRACT(YEAR from saledate) AS year_sale,
EXTRACT(MONTH from saledate) AS month_sale,
store,
COUNT(DISTINCT saledate) AS num_saledate,
SUM(amt) AS total
FROM trnsact

WHERE saledate < '2005-08-01'
AND stype = 'p'
GROUP BY year_sale, month_sale, store
HAVING num_saledate >= 20) AS trnsact_cleaned
```

5 (sub)

```
SELECT
store,
COUNT(DISTINCT saledate) AS num_saledate,
SUM(amt) AS total
FROM trnsact
WHERE saledate < '2005-08-01'
AND stype = 'p'
GROUP BY store
HAVING num_saledate >= 20
```

5

```
SELECT
CASE WHEN (s.msa_high >=50 AND s.msa_high <=60) THEN 'low'
WHEN (s.msa_high >60 AND s.msa_high <=70) THEN 'medium'
WHEN s.msa_high >70 THEN 'high'
END AS education,
SUM(trnsact_cleaned.total)/SUM(trnsact_cleaned.num_saledate) AS average_sale
```

```
FROM store_msa s
```

```
JOIN
(SELECT
store,
COUNT(DISTINCT saledate) AS num_saledate,
SUM(amt) AS total
FROM trnsact
WHERE saledate < '2005-08-01'
AND stype = 'p'
GROUP BY store
HAVING num_saledate >= 20) AS trnsact_cleaned
```

```
ON trnsact_cleaned.store = s.store
```

```
GROUP BY education
GROUP BY s_cleaned.education
HAVING average_sale IS NOT NULL AND COUNT(DISTINCT t.saledate)>=20
ORDER BY s_cleaned.education
```

6

```
SELECT
s.city,
s.state,
s.store,
s.msa_income,
SUM(trnsact_cleaned.total)/SUM(trnsact_cleaned.num_saledate) AS
average_daily_revenue
```

```
FROM store_msa s
```

```
JOIN
(SELECT
store,
COUNT(DISTINCT saledate) AS num_saledate,
SUM(amt) AS total
FROM trnsact
WHERE saledate < '2005-08-01'
AND stype = 'p'
```

```
GROUP BY store
HAVING num_saledate >= 20) AS trnsact_cleaned
```

```
ON trnsact_cleaned.store = s.store
```

```
GROUP BY s.city,s.state,s.store,s.msa_income
```

Or

```
SELECT TOP 1
s.city,
s.state,
s.store,
s.msa_income,
SUM(trnsact_cleaned.total)/SUM(trnsact_cleaned.num_saledate) AS
average_daily_revenue
```

```
FROM store_msa s
```

```
JOIN
(SELECT
store,
COUNT(DISTINCT saledate) AS num_saledate,
SUM(amt) AS total
FROM trnsact
WHERE saledate < '2005-08-01'
AND stype = 'p'
GROUP BY store
HAVING num_saledate >= 20) AS trnsact_cleaned
```

```
ON trnsact_cleaned.store = s.store
```

```
GROUP BY s.city,s.state,s.store,s.msa_income
ORDER BY average_daily_revenue
```

```
7 (sub)
SELECT
sku,
COUNT(sprice)
FROM trnsact
WHERE stype = 'p'
GROUP BY sku
HAVING COUNT(sprice)>100
```

7

SELECT TOP 3

s.brand,

s.sku,

t_cleaned.avg_sprice,

t_cleaned.std_sprice

FROM skuinfo s

JOIN(SELECT

sku,

AVG(sprice) AS avg_sprice,

STDDEV_POP(sprice) AS std_sprice,

COUNT(sprice) AS num_sprice

FROM trnsact

WHERE stype = 'p'

GROUP BY sku

HAVING COUNT(sprice)>100) AS t_cleaned

ON t_cleaned.sku = s.sku

ORDER BY t_cleaned.std_sprice DESC

9

SELECT

year_sale || month_sale,

total/num_saledate AS average_sale

FROM

(SELECT

EXTRACT(YEAR from saledate) AS year_sale,

EXTRACT(MONTH from saledate) AS month_sale,

COUNT(DISTINCT saledate) AS num_saledate,

SUM(amt) AS total

FROM trnsact

WHERE saledate < '2005-08-01'

AND stype = 'p'

GROUP BY year_sale, month_sale

HAVING num_saledate >= 20) AS trnsact_cleaned

ORDER BY year_sale || month_sale

10

(sub)

SELECT

store,

SUM(CASE WHEN EXTRACT(MONTH from saledate) = 11 THEN sprice
END) AS nov_total_sprice,

SUM(CASE WHEN EXTRACT(MONTH from saledate) = 12 THEN sprice
END) AS dec_total_sprice,

COUNT(DISTINCT saledate) AS num_saledate,

SUM(sprice) AS total

FROM trnsact

WHERE (saledate <= '2004-12-31' AND saledate >= '2004-11-01')

AND stype = 'p'

GROUP BY store

HAVING num_saledate >= 20

(sub)

SELECT

store,

sku,

SUM(CASE WHEN EXTRACT(MONTH from saledate) = 11 THEN sprice
END) AS nov_total_sprice,

SUM(CASE WHEN EXTRACT(MONTH from saledate) = 12 THEN sprice
END) AS dec_total_sprice,

(dec_total_sprice-nov_total_sprice) AS diff,

diff/nov_total_sprice AS factor,

factor*100 AS percentage_increase,

COUNT(DISTINCT saledate) AS num_saledate

FROM trnsact

WHERE (saledate <= '2004-12-31' AND saledate >= '2004-11-01')

AND stype = 'p'

GROUP BY store, sku

HAVING num_saledate >= 20

10

```
SELECT TOP 3
d.deptdesc AS dept_name,
m.city,
m.state,
m.store,
SUM(CASE WHEN EXTRACT(MONTH from t.saledate) = 11 THEN t.sprice
END) AS nov_total_sprice,
SUM(CASE WHEN EXTRACT(MONTH from t.saledate) = 12 THEN t.sprice
END) AS dec_total_sprice,
COUNT(CASE WHEN EXTRACT(MONTH from t.saledate) = 11 THEN t.saledate
END) AS nov_total_sdate,
COUNT(CASE WHEN EXTRACT(MONTH from t.saledate) = 12 THEN t.saledate
END) AS dec_total_sdate,
nov_total_sdate+dec_total_sdate AS total_sdate,
nov_total_sprice/nov_total_sdate AS nov_avg,
dec_total_sprice/dec_total_sdate AS dec_avg,
(dec_avg-nov_avg) AS diff,
diff/nov_avg AS factor,
factor*100 AS percentage_increase

FROM
trnsact t

JOIN store_msa m
ON m.store = t.store

JOIN skuinfo s
ON t.sku = s.sku

JOIN deptinfo d
ON d.dept = s.dept

WHERE (saledate <= '2004-12-31' AND saledate >= '2004-11-01')
AND stype = 'p'

GROUP BY dept_name, m.city, m.state, m.store
HAVING total_sdate >= 20
ORDER BY percentage_increase DESC
```

11

```
SELECT TOP 3
m.city,
m.state,
m.store,
SUM(CASE WHEN EXTRACT(MONTH from t.saledate) = 8 THEN t.sprice
END) AS aug_sprice,
SUM(CASE WHEN EXTRACT(MONTH from t.saledate) = 9 THEN t.sprice
END) AS sep_sprice,
COUNT(CASE WHEN EXTRACT(MONTH from t.saledate) = 8 THEN t.saledate
WHEN EXTRACT(MONTH from t.saledate) = 9 THEN t.saledate
END) AS total_sdate,
(aug_sprice-sep_sprice) AS difference

FROM
trnsact t

JOIN store_msa m
ON m.store = t.store

WHERE (t.saledate <= '2004-09-30' AND t.saledate >= '2004-08-01')
AND t.stype = 'p'

GROUP BY m.city, m.state, m.store
HAVING total_sdate >= 20
ORDER BY difference
```



```
12_1a
SELECT
store,
month_sale,
MIN(total) as min_total,
ROW_NUMBER() OVER (PARTITION BY store ORDER BY min_total) AS rownum
```

```
FROM
(SELECT
EXTRACT(MONTH from saledate) AS month_sale,
store,
COUNT(DISTINCT saledate) AS num_saledate,
SUM(amt) AS total
FROM trnsact
WHERE saledate < '2005-08-01'
AND stype = 'p'
GROUP BY month_sale, store
HAVING num_saledate >= 20) AS tot_rev_per_store
```

```
GROUP BY store, month_sale
```

```
12_1b
SELECT
month_sale,
COUNT(store) AS num_store,
RANK() OVER (ORDER BY num_store DESC) AS month_rownum
```

```
FROM
(SELECT
store,
month_sale,
MIN(total) as min_total,
ROW_NUMBER() OVER (PARTITION BY store ORDER BY min_total) AS rownum
```

```
FROM
(SELECT
EXTRACT(MONTH from saledate) AS month_sale,
store,
COUNT(DISTINCT saledate) AS num_saledate,
SUM(amt) AS total
FROM trnsact
WHERE saledate < '2005-08-01'
AND stype = 'p'
GROUP BY month_sale, store
HAVING num_saledate >= 20) AS tot_rev_per_store
```

```
GROUP BY store, month_sale) AS num_store_min
```

WHERE rownum = 1

GROUP BY month_sale

12_2a

SELECT

store,

month_sale,

MIN(avg_rev) as min_avg_rev,

ROW_NUMBER() OVER (PARTITION BY store ORDER BY min_avg_rev) AS rownum

FROM

(SELECT

EXTRACT(MONTH from saledate) AS month_sale,

store,

COUNT(DISTINCT saledate) AS num_saledate,

SUM(amt)/num_saledate AS avg_rev

FROM trnsact

WHERE saledate < '2005-08-01'

AND stype = 'p'

GROUP BY month_sale, store

HAVING num_saledate >= 20) AS avg_rev_per_store

GROUP BY store, month_sale

12_2b

SELECT

month_sale,

COUNT(store) AS num_store,

RANK() OVER (ORDER BY num_store DESC) AS month_rownum

FROM

(SELECT

store,

month_sale,

MIN(avg_rev) as min_avg_rev,

ROW_NUMBER() OVER (PARTITION BY store ORDER BY min_avg_rev) AS rownum

FROM

(SELECT

EXTRACT(MONTH from saledate) AS month_sale,

store,

COUNT(DISTINCT saledate) AS num_saledate,

SUM(amt)/num_saledate AS avg_rev

FROM trnsact

```
WHERE saledate < '2005-08-01'  
AND stype = 'p'  
GROUP BY month_sale, store  
HAVING num_saledate >= 20) AS avg_rev_per_store
```

```
GROUP BY store, month_sale) AS num_store_min
```

```
WHERE rownum = 1
```

```
GROUP BY month_sale
```