1. select distinct bid, name, star, nreview
from
(select b.bid, name, avg(stars) as star, count(rid) as nreview
from business b join review r
on b.bid = r.bid
where state = 'GA'
group by b.bid) as a
where nreview >= 20
order by star desc, nreview desc, name
limit 10;

2. with t as (select a.uid, a.name, stars, rid, city, state
from
(select u.uid, name, stars, rid, r.bid from user u join review r on u.uid = r.uid) a
join business b
on a.bid = b.bid)

select distinct uid, name, avg(stars) as star, count(rid) as nreview,
count(distinct city) as ncities
from t
group by uid
having count(distinct state) > 2
order by ncities desc, star desc;

3. with t as (
select u.uid, name, stars
from user u join review r
on u.uid = r.uid
),
oneReview as (select uid, name, count(*) as nreview
from t
group by uid
having count(*) = 1)

select distinct o.uid, name, bid
from oneReview o
join review r
on o.uid = r.uid
where stars = 5
order by bid;

4. with t as (select a.uid, a.name, stars, rid, city, state, a.bid
from
(select u.uid, name, stars, rid, r.bid from user u join review r on u.uid = r.uid) a
join business b
on a.bid = b.bid),

five_FL as (select uid, name
from t
where state = 'FL'
group by uid
having count(*) > 4),

rest as (
select uid
from t
join category c
on t.bid = c.bid
where category = 'Restaurants'
)

select distinct uid, name
from five_FL
where uid not in (select uid from rest)
order by uid;

5. with t as (select a.uid, a.name, yelping_since, stars, rid, city, state, a.bid
from
(select u.uid, name, yelping_since, stars, rid, r.bid from user u join review r on u.uid = r.uid) a
join business b
on a.bid = b.bid),

t1 as (
select t.uid, name, yelping_since, city, category from t
join category c
on t.bid = c.bid)

select distinct uid, name, yelping_since
from t1
where category in ('coffee & tea', 'bars','pubs','pizza')
and city in ('Atlanta', 'Decatur', 'Buckhead')

```
order by name, yelping_since desc;

6. with t as (select a.uid, yelping_since,
b.name, address, latitude, longitude, stars, rid, city, state, a.bid
from
(select u.uid, name, yelping_since, stars, rid, r.bid from user u join review r on u.uid = r.uid) a
join business b
on a.bid = b.bid),

t1 as (
select t.bid, name, address, latitude, longitude, city, category, stars from t
join category c
on t.bid = c.bid)

select distinct name, address, ( 3959 * acos( cos( radians(33.7754277) )
        * cos( radians(latitude) )
        * cos( radians(longitude) - radians(-84.3961783) )
        + sin( radians(33.7754277) )
        * sin( radians(latitude) ) ) ) distance, avg(stars) star
from t1
where category = 'coffee & tea'
group by bid
order by star desc, distance
limit 3;

7. with t as (select a.uid, b.name, yelping_since, stars, rid, city, state, a.bid
from
(select u.uid, name, yelping_since, stars, rid, r.bid from user u join review r on u.uid = r.uid) a
join business b
on a.bid = b.bid)

select distinct bid, name, city, state, count(*) nreview
from t
group by bid
having count(*) > 15
and avg(stars) = 5
order by count(*) desc, bid;

8. with t as (
select u.uid, name, stars
```

```
from user u join review r
on u.uid = r.uid
),
oneReview as (select uid, name, count(*) as nreview
from t
group by uid
having count(*) = 1),

fake_user as (select distinct o.uid, name, bid
from oneReview o
join review r
on o.uid = r.uid
where stars = 5
order by bid),

t1 as (select a.uid, b.name, yelping_since, stars, rid, city, state, a.bid
from
(select u.uid, name, yelping_since, stars, rid, r.bid from user u join review r on u.uid = r.uid) a
join business b
on a.bid = b.bid),

n as (select bid, count(*) nreview
from t1
group by bid),

fake_review as (select bid, name, city, state, count(*) fake_review
from t1
where uid in (select uid from fake_user)
group by bid
having count(*) > 50)

select distinct n.bid, name, city, state, (fake_review/nreview) percent
from n join fake_review
on n.bid = fake_review.bid
order by percent desc;

9. with t as (select a.uid, a.name, yelping_since, stars, rid, city, state, a.bid
from
(select u.uid, name, yelping_since, stars, rid, r.bid from user u join review r on u.uid = r.uid) a
join business b
```

```
on a.bid = b.bid),

bea as (select uid
from t
where not (city = 'Beaverton' and state = 'OR'))

select distinct uid, name, yelping_since, count(*) nreview
from t
where uid not in (select uid from bea)
group by uid
having count(distinct bid) >= 5
order by nreview desc, yelping_since;

10. with t as (select a.uid, b.name, yelping_since, stars, rid, city, state, a.bid
from
(select u.uid, name, yelping_since, stars, rid, r.bid from user u join review r on u.uid = r.uid) a
join business b
on a.bid = b.bid),

t1 as (select uid, t.bid, name, city, state, stars, category
from t join category c
on t.bid = c.bid),

traveler as (select uid
from t
group by uid
having count(distinct city) > 10)

select distinct bid, name, city, state, avg(stars) as rating, count(*) as nreview
from t1
where category = 'burgers'
and uid in (select uid from traveler)
group by bid
having count(*) > 5
order by rating desc, nreview desc, name;

11.
with t as (select a.uid, a.name, yelping_since, stars, rid, city, state, a.bid
from
(select u.uid, name, yelping_since, stars, rid, r.bid from user u join review r on u.uid = r.uid) a
```

```
join business b
on a.bid = b.bid),

t1 as (select uid, t.bid, yelping_since, name, city, state, stars, category
from t join category c
on t.bid = c.bid),

ramen as (select distinct bid
from t1
where category = 'ramen'
and city = 'Doraville' and state = 'GA')

select distinct uid, name, yelping_since
from t1 join ramen on t1.bid = ramen.bid
group by uid
having count(distinct(t1.bid)) >=2
order by uid;
```

12.

```
with t as (select a.uid, b.name, yelping_since, stars, rts, rid, city, state, a.bid
from
(select u.uid, name, yelping_since, stars, rts, rid, r.bid from user u join review r on u.uid = r.uid) a
join business b
on a.bid = b.bid),

t1 as (select rid, rts, uid, t.bid, yelping_since, name, city, state, stars, category
from t join category c
on t.bid = c.bid),

march as (select distinct bid, count(rid) as marchrev, avg(stars) as march_rating
from t1
where rts >= "2019-03-01 00:00:00" and rts < "2019-04-01 00:00:00"
group by bid having count(rid)>=3),

april as (select distinct bid, name, city, count(rid) as aprilrev, avg(stars) as april_rating
from t1
where rts >= "2019-04-01 00:00:00" and rts < "2019-05-01 00:00:00"
group by bid having count(rid)>=3)

select distinct april.bid, name, city, april_rating - march_rating as jump, marchrev, aprilrev
```

```
from march join april
on march.bid = april.bid
where (april_rating - march_rating) >= 1
order by jump desc, aprilrev desc, marchrev desc;
```