4. 7

```
create table employee(
    ID      char(10)
    person_name   char(20),
    street      char(20),
    city      char 20),
    primary key (ID))


create table company (
    company_name  char(20),
    city      char(20),
    primary key (company_name))
```

```
create table works (
    ID    char(10),
    company_name    char 20),
    salary char(20),
    primary key (ID),
    foreign key (company_name) reference (company),
    foreign key (ID) reference (employee) )


create table manages(
    ID    char(10),
    manage_id char(10),
    primary key(ID),
    foreign key (ID) reference (employee))
```

4.9   First this employee will cause a tuple being deleted. which will delete all the employees with the same manager including manager himself/herself

4.15.
```
select *
from section inner join classroom
using (building, room_number)
```

4.17
```
select student.ID
from   student right outer join advisor on student.ID = advisor.s_id
where  i_id = null
```

4. 20
```
create view tot_credits (year, tot_credits)
as (select year, sum (credits)
    from takes natural join course
    group by year)
```