Task1

Q1
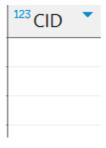
```
select CID from customer as A
where exists (select * from customer as B
where B.CID = 1 and A.City = B.City)
```

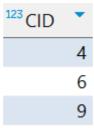|	123 CID ▼	
1	1	
2	3	

Q2

```
select CID from customer
where not exists (select * from food as A where A.city not in (select City from
food as B, orders
where orders.FID = B.FID and customer.CID = orders.CID))
```

123 CID ▼

Q3

```
select distinct CID from orders as A
where not exists(
select B.FID from orders as B
where B.CID = 4 and B.FID not in (select C.FID from orders as C
where C.CID = A.CID))
```

¹²³ CID ▼
4
6
9

Task2

Q1

```
create table Sales(
    Food_ID int primary key,
    Food_name varchar(20) not null,
    total_sales int
)
```

```
insert into Sales(Food_ID,Food_name,total_sales)
select food.FID,Name,sum(quantity) from food,orders
where food.FID = orders.FID
group by food.FID, food.Name
```

Q2

```
insert into orders values(4,2,1,3)
```

```
update sales set total_sales = (select sum(quantity) from orders
where orders.FID = sales.Food_ID group by orders.FID)
```

Q3

```
alter table sales add grade int default 6 check(grade >= 0 and grade <= 10)
```
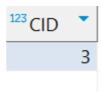
Task3

Q1

```
create view Shu-view as
select customer.CID,customer.City from orders,food,customer
```

```
where customer.CID = orders.CID and orders.FID = food.FID and food.City = '四川'
or food.City = '重庆'
```

Q2

```
select Shu-view.CID from Shu-view,food,orders
where Shu-view.CID = orders.CID and orders.FID = food.FID
group by orders.CID
ORDER BY sum(orders.quantity * food.Price) DESC LIMIT 1;
```


Q3

可以成功，因为在视图创建的定义中，不满足以下条件：

- JOIN、GROUP BY等子句
- DISTINCT等修饰词
- SELECT子句中含有聚合函数
- WHERE的子查询引用了FROM句子中的表

因此在使用insert语句插入表项时不会导致失败。

Q4

```
create view Male-view as
select CID,City from customer
where Gender = '男'
with check option
```

Q5

不能成功，因为输入的数据中没有性别选项，导致违反check option，及性别为男的规定。

SQL 错误 [1369] [HY000]: CHECK OPTION failed '第四次实验.male'
CHECK OPTION failed '第四次实验.male'