

1)

```
project ((project items over Item#) intersection (project (select (cansupply rename (Sup# as Sup#1, Item# as Item#1, Cost as Cost1) times cansupply ) where (Item#1 = Item# and Sup#1 <> Sup# and Cost1 = Cost)) over Item# ) join items) over Item#, Desc
```

2)

```
project ((project ( select ((project purchase over Item#, Quantity) rename (Quantity as purchasedQ ) join ((project procurement over Item#, Quantity) rename (Quantity as procuredQ))) where purchasedQ > procuredQ) over Item#) join items) over Item#, Desc
```

3)

```
project ( ( (project ( select items where Quantity > 20) over Item#) difference (project(select purchase where Date > 160000) over Item#) ) join items ) over Item#, Desc
```

4)

```
project ( items join ((project (select items where Quantity < 20) over Item# ) difference (project (select procurement where Date > 150000) over Item# ))) over Item#, Desc
```

5)

```
project (((project ((project ( select creditcards where Exp < 1607) over Card#) join cardowners ) over Cus#) difference (project ((project ( select creditcards where Exp >= 1607) over Card#) join cardowners ) over Cus#)) join customers ) over Cus#, Cname
```

6)

```
project (customers join (divide (project (purchase join ( project (select cansupply where Sup#= "S01") over Item#)) over Cus#, Item#) by (project (select cansupply where Sup#= "S01") over Item#) ) ) over Cus#, Cname
```

7)

```
project (customers join ((project (select items where Price > 100) over Item#) join (project (select purchase where Date >= 150000 and Date < 160000) over Cus#, Item#))) over Cus#, Cname
```

8)

```
select ( (project employees over Emp#, Ename, WorkDept#) join ((project admin over Dept#, Manager#) rename (Dept# as ManagedDept#, Manager# as Emp#))) where WorkDept# <> ManagedDept#
```

9)

project (select ((employees rename (Emp# as Emp#1, Ename as Ename1, Eskill as Eskill1, WorkDept# as WorkDept#1)) times employees ) where (Emp#1 <> Emp# and WorkDept#1 = WorkDept# and Eskill1 = Eskill)) over Emp#1, Ename1, Emp#, Ename

10)

project (select ((employees rename (Emp# as Emp#1, Ename as Ename1, Eskill as Eskill1, WorkDept# as WorkDept#1)) times employees ) where (Emp#1 <> Emp# and WorkDept#1 = WorkDept# and Eskill1 = Eskill)) over Emp#1, Ename1, Emp#, Ename