1)

π*Fname, Lname* (σ*Dno=1* OR *Dno=5* (Employee))

Fname	*Lname*
John	Smith
Franklin	Wong
Ramesh	Narayan
Joyce	English
James	Borg

2)

πDname (σ*Dept_Locations*.Dnumber = *Department.Dnumber* AND *Dlocation=Houston*(Department × Department_Locations))

Dname
Research
Headquarters

3)

$\pi_{Essn}(\sigma_{Pno = 1 \text{ AND } Hours > 10}(Works\_On))$

Essn
123456789
453453453

4)

$Employees \leftarrow \pi_{Fname,Lname,Ssn}(\sigma_{Dno=5}(Employee))$

$ProjXid \leftarrow \pi_{Pnumber}(\sigma_{Pname=ProductX}(Projects))$

$ProjSSNs \leftarrow \pi_{Essn}(\sigma_{Hours > 10}(Works\_On \bowtie_{Pno=Pnumber} ProjXid))$

$\pi_{Fname,Lname}(Employees \bowtie_{Ssn=Essn} ProjSSNs)$

Fname	*Lname*
John	Smith
Joyce	English

5)

SupID ← πSsn(σFname=Franklin AND Lname=Wong (Employee))

πFname,Lname (Employee ⋈Super_ssn = Ssn SupID)

Fname	*Lname*
John	Smith
Ramesh	Narayan
Joyce	English

6)

πPno, totalHrs (Pno F SUM Hours (Project ⋈ Pno=Pnumber Works_On))

Pname	totalHrs
ProductX	52.5
ProductY	37.5
ProductZ	50
Computerization	55
Reorganization	25
Newbenefits	55

7)

πEssn, Pno(Works_On) / πPnumber(Project)

Result is empty

8)

πDname,AvgSalary (Dno F AVG Salary (Employee ⋈Dno=Dnumber Dept.))

Dname	*AvgSalary*
Research	33250
Administration	31000
Headquarters	55000