1. $\Pi_{ID,\ employee.person\_name}(\sigma_{company\_name="Big\ Bank"}$(employee $\bowtie_{employee.person_name=works.person_name}$works))

$\Pi_{ID,\ employee.person\_name,\ city}(\sigma_{company\_name="Big\ Bank"}$(employee $\bowtie_{employee.person_name=works.person_name}$works))

$\Pi_{ID,\ employee.person\_name,\ street,city}(\sigma_{company\_name=}$"Big Bank" $\wedge$ salary > 10000 (employee $\bowtie_{employee.person_name=works.person_name}$works))

$\Pi_{ID,\ employee.person\_name}$ ($\sigma_{employee.city=company.city}$ (employee $\bowtie_{employee.person_name=works.person_name}$works) $\bowtie_{works.company\_name=company.company\_name}$)

2. $\Pi_{ID,\ employee.person\_name}(\sigma_{company\_name\neq"Big\ Bank"}$(employee $\bowtie_{employee.person_name=works.person_name}$works))
   - ?

3. 1) If we insert values that are not present in the department relation to the dept_name attribute of instructor, we violate the foreign-key constraint.

(For example: “Math”, “Calculus”)

2) If we delete values in dept_name of department that are referenced by dept_name of instructor, we violate the foreign-key constraint.

(For example: “Biology”, “Comp. Sci.”)

4. person_name or ID