Lab 1.

№1. 1. $\Pi_{ID, person\_name}(\sigma_{company\_name = "Big Bank"}(works))$

2. $\Pi_{ID, person\_name, city}(employee \bowtie_{employee.id = works.id}(\sigma_{comp.name = "Big Bank"}(works)))$

3. $\Pi_{ID, person\_name, street, city}(employee \bowtie_{employee.id = works.id}(\sigma_{comp.name = "BigBank" \wedge salary > 10000}(employee, works)))$

~~4. $\Pi_{ID, person\_name}(\sigma_{employee.city = employee.city}$~~

4. $\Pi_{ID, person\_name}(employee \bowtie_{employee.id = works.id} \wedge_{employee.city = company.city} \wedge_{works.comp.name = company.company\_name}(employee \times works \times company)))$

№2. 1. $\Pi_{ID, person\_name}(\sigma_{company\_name != "BigBank"}(employee))$

2. $\Pi_{ID, person\_name}(employee \bowtie_{employee.id = works.id}(employee \times works))$

№3.

department
dept.name
building
budget

instructor
iD
name
dept.name
salary

Example: (instructor) 20B010207, David, math, 180 000

  if we <u>insert</u> dept.name and in department table they don't match,
or it has different dept.name then it would violate the foreign key constraint

    department: PP1, KBTU, 200 000

  if we <u>delete</u> department table, where at least 1 student has dept.name
  PP1, it would violate the foreign key constraint

№4.

    employee (<u>person_name</u>, street, city)   primary keys

    works (<u>person_name, company_name</u>, salary)

    company (<u>company_name</u>, city)