6.2

a. $\Pi_{person_name}(\sigma_{city="Miami"}(employee))$

b. $\Pi_{person_name}(\sigma_{salary>gt;100000}(employee \bowtie works))$

c. $\Pi_{person_name}(\sigma_{salary>gt;100000 \wedge city="Miami"}(employee \bowtie works))$

6.3

a. $\Pi_{branch\_name}(\sigma_{branch\_city="Chicago"}(branch))$

b.$\Pi_{ID}(\sigma_{branch\_name="Downtown"}(loan \bowtie_{loan.loan\_number=borrower.loan\_number} borrower))$

6.4

a.

$\Pi_{ID,person\_name}(employee) - \Pi_{ID,person\_name}(employee \bowtie_{employee.ID=works.ID} (\sigma_{company\_name="BigBank"}(works$

b.

$\Pi_{ID,person\_name}(employee) - \Pi_{A.ID,A.person\_name}(\rho_A(employee) \bowtie_{A.salary<B.salary} \rho_B(employee))$

6.10

a.

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

b.

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

c.

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

d.

$$\Pi_{ID,person\_name}(employee \bowtie_{employee.person\_name=works.person\_name} works \bowtie_{works.company\_name=company.company\_na$$

为了使公式在pdf中完全显示，下有图像：

6.2

a. $\Pi_{person_name}(\sigma_{city="Miami"}(employee))$

b. $\Pi_{person_name}(\sigma_{salary>gt;100000}(employee \bowtie works))$

c. $\Pi_{person_name}(\sigma_{salary>gt;100000 \wedge city="Miami"}(employee \bowtie works))$

6.3

a. $\Pi_{branch\_name}(\sigma_{branch\_city="Chicago"}(branch))$

b.$\Pi_{ID}(\sigma_{branch\_name="Downtown"}(loan \bowtie_{loan.loan\_number=borrower.loan\_number} borrower))$

6.4

a.

$\Pi_{ID,person\_name}(employee) - \Pi_{ID,person\_name}(employee \bowtie_{employee.ID=works.ID} (\sigma_{company\_name="BigBank"}(works)))$

b.

$\Pi_{ID,person\_name}(employee) - \Pi_{A.ID,A.person\_name}(\rho_A(employee) \bowtie_{A.salary<B.salary} \rho_B(employee))$

6.10

a.

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

b.

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

c.

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

d.

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