1. $\pi_{sname}(\pi_{sid}(\pi_{pid}\,\sigma_{color='red'}\,Parts)\bowtie Catalog)\bowtie Suppliers$

2. $\pi_{sid}(\pi_{pid}(\sigma_{color='red'\,\vee\,color='green'}\,Parts)\bowtie catalog)$

3. $\rho(R_1,\ \pi_{sid}((\pi_{pid}\,\sigma_{color='red'}\,Parts)\bowtie catalog))$
$\rho(R_2,\ \pi_{sid}\,\sigma_{address=='221\ packer\ Street'}\,Suppliers)$
$R_1\cup R_2$

4. $\rho(R_1,\ \pi_{sid}((\pi_{pid}\,\sigma_{color='red'}\,Parts)\bowtie catalog))$
$\rho(R_2,\ \pi_{sid}((\pi_{pid}\,\sigma_{color='green'}\,Parts)\bowtie catalog))$
$R_1\cap R_2$

5. $((\pi_{sid,pid}\,catalog)/(\pi_{pid}\,Parts))$

6. $((\pi_{sid,pid}\,catalog)/(\pi_{pid}\,\sigma_{color=='red'}\,Parts))$

7. $((\pi_{sid,pid}\,catalog)/(\pi_{pid}\,\sigma_{color=='red'\,\vee\,color=='green'}\,Parts))$

8. $\rho(R_1,((\pi_{sid,pid}\,catalog)/(\pi_{pid}\,\sigma_{color=='red'}\,Parts)))$
$\rho(R_2,((\pi_{sid,pid}\,catalog)/(\pi_{pid}\,\sigma_{color=='green'}\,Parts)))$
$R_1\vee R_2$

9. $\rho(R_1,Catalog)$ $\rho(R_2,\ catalog)$
$\pi_{R_1.sid,R_2.sid}(\sigma_{R_1.pid==R_2.pid\,\wedge\,R_1.sid\neq R_2.sid}$
$\wedge\,R_1.cost>R_2.cost(R_1\times R_2)$

10. $\rho(R_1,catalog)$ $\rho(R_2,catalog)$
$\pi_{R_1.pid}\,\sigma_{R_1.pid==R_2.pid\,\wedge\,R_1.sid\neq R_2.sid}(R_1\times R_2)$