

$$1. R = \pi_{sname}(\sigma_{\text{color}=\text{red}}(\text{Sup} \bowtie \text{Cat} \bowtie \text{Parts}))$$

$$2. R_1 = \sigma_{\text{color}=\text{red}}(\text{Cat} \bowtie \text{Parts})$$

$$R_2 = \sigma_{\text{color}=\text{green}}(\text{Cat} \bowtie \text{Parts})$$

$$R = \pi_{sid}(R_1 \cup R_2)$$

$$3. R = \pi_{sid}(\sigma_{\text{Adr}=\text{21 George St}}(\text{Sup})) \cup \pi_{sid}(\sigma_{\text{color}=\text{red}}(\text{Cat} \bowtie \text{Parts}))$$

$$4. R = \pi_{sname}(\sigma_{\text{Adr}=\text{21 George St}}(\text{Sup})) \cup \pi_{sname}(\sigma_{\text{color}=\text{red}}(\text{Sup} \bowtie \text{Cat} \bowtie \text{Parts}))$$

$$5. R = \pi_{sid}(\sigma_{\text{color}=\text{red}}(\text{Cat} \bowtie \text{Parts})) \cap \sigma_{\text{color}=\text{green}}(\text{Cat} \bowtie \text{Parts})$$

$$6. R_1 = \text{Sup} \bowtie \text{Cat}, R_2 = \text{Sup} \bowtie \text{Cat}$$

$$R = \pi_{R_1.sid}(\sigma_{R_1.cost > R_2.cost}(R_1 \bowtie R_2)) \cup \pi_{R_2.sid}(\sigma_{R_1.cost > R_2.cost}(R_1 \bowtie R_2))$$

$$7. R_1 = \text{Cat} \bowtie \text{Parts}, R_2 = \sigma_{\text{color} \neq \text{red}}(R_1)$$

$$R = \pi_{sid}(\text{Sup}) - \pi_{sid}(R_2)$$

$$8. R_1 = \text{Cat} \times \text{Parts}$$

$$R_2 = \pi_{sid,pid}(R_1) - \pi_{sid,pid}(\text{Cat})$$

$$R = \pi_{sid}(\text{Cat}) - \pi_{sid}(R_2)$$

1. Names of all suppliers that sell red parts that cost < 100

2. Names of all suppliers that sell red parts that cost < 100

3. The name of a supplier that sells red parts with cost < 100 and the name of a supplier that sells green parts with cost < 100

4. SIDs of all suppliers that sell both red and green parts with cost < 100

5. Names of all suppliers that sell red and green parts with cost < 100 .