

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

$$ii. (\pi_{sid}((\sigma_{color='red'}(Parts) \bowtie Catalog)) \vee (\pi_{sid}((\sigma_{color='green'}(Parts) \bowtie Catalog)))$$

$$iii. (\pi_{sid}(\sigma_{color='red'}(Parts) \bowtie Catalog)) \vee (\pi_{sid}(\sigma_{address='1065 Military Trail'}(Suppliers)))$$

$$iv. \rho_A(\pi_{sid}((\pi_{pid}(\sigma_{color='red'}(Parts))) \bowtie Catalog))$$

$$\rho_B(\pi_{sid}((\pi_{pid}(\sigma_{color='green'}(Parts))) \bowtie Catalog))$$

$$A \wedge B$$

$$v. \pi_{sid, pid}(Catalog) / \pi_{pid}(Parts)$$

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

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

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

$$\vee (\pi_{sid, pid}(Catalog) / \pi_{pid}(\sigma_{color='green'}(Parts)))$$

$$ix. \pi_{A.sid, B.sid}(\sigma_{A.cost > B.cost \wedge A.sid \neq B.sid \wedge A.pid = B.pid}(\rho_A(Catalog) \times \rho_B(Catalog)))$$

$$x. \pi_{A.pid}(\sigma_{A.sid \neq B.sid \wedge A.pid = B.pid}(\rho_A(Catalog) \times \rho_B(Catalog)))$$

$$xi. \rho_A((\pi_{sid}(\sigma_{sname='Canada Suppliers'}(Suppliers))) \bowtie Catalog)$$

$$\rho_D(\pi_{B.sid, B.pid, B.cost}(\sigma_{B.cost < C.cost}(\rho_B(A) \times \rho_C(A))))$$

$$\pi_{pid}(A - D)$$

$$xii. \pi_{sid, pid}(\sigma_{cost < 200}(Catalog)) / \pi_{sid}(Suppliers)$$