a) $\Pi_{class,country}(\sigma_{bore >= 16}(Classes))$

	class	country
1	Iowa	USA
2	North Carolina	USA
3	Yamato	Japan

b) $\Pi_{name}(\sigma_{launched < 1921}(Ships))$

	name
1	Haruna
2	Hiei
3	Kirishima
4	Kongo
5	Ramillies
6	Renown
7	Repulse
8	Resolution
9	Revenge
10	Royal Oak
11	Royal Sovereign
12	Tennessee

c) $\Pi_{ship}(\sigma_{battle = Denmark\ Strait\ AND\ result = sunk}(Outcomes))$

	ship
1	Bismark
2	Hood

d) R1 = $\sigma_{launched > 1921}$(Ships))
R2 = $\sigma_{displacment > 35000}$(Classes))
R3 = R1 ⋈ R2
$\square_{name}$ (R3)

	name
1	Iowa
2	Missouri
3	Musashi
4	New Jersey

e)

	ship	displacement	numGuns
1	Kirishima	32000	8
2	South Dakota	NULL	NULL
3	Washington	37000	9

f) $\square_{name}$(Ships)) ∪ $\square_{ship}$(outcomes)
(total of 33 rows show up)

g) R1 = $\square_{class}$(Classes)
ρ_{Ships2} (Ships)
R2 = $\square_{class}$(Ships ⋈ $_{ships.class = ships2.class\ AND\ ships.name <> ships2.name)}$(Ships2)

h)R1 = $\square_{class}$($\sigma_{type = "bb"}$(Classes))
R2 = $\square_{class}$($\sigma_{type = "bc"}$(Classes))
(R1 ∩ R2)

	country
1	Gt. Britain
2	Japan

i)$R1 = \Pi_{ship,\ result,\ date}\ (Battles \bowtie_{(battle = name)} Outcomes)$

$R2 = \rho_{R2(ship2,\ result2,\ date2)}\ (R1)$

$R3 = R1 \bowtie_{(ship = ship2\ AND\ result = damaged\ AND\ date < date2)} R2$

$R4 = \Pi_{ship}(R3)$