

Problem 1

6.1.2 b)

```
SELECT birthdate
FROM MovieStar
WHERE name = 'Sandra Bullock';
```

6.1.2 d)

```
SELECT name
FROM MovieExec
WHERE netWorth >= 10000000;
```

6.1.2 e)

```
SELECT name
FROM MovieStar
WHERE gender = 'Male' OR address LIKE '%Malibu%';
```

Problem 2

6.1.4 c)

```
SELECT ship, battle
FROM Outcomes
WHERE result = 'sunk';
```

Result:

| ship | battle |
|-------------|----------------|
| Arizona | Pearl Harbor |
| Bismarck | Denmark Strait |
| Fuso | Surigao Strait |
| Hood | Denmark Strait |
| Kirishima | Guadalcanal |
| Scharnhorst | North Cape |
| Yamashiro | Surigao Strait |

6.1.4 d)

SELECT name

From Ships

WHERE name = class;

Result:

| name |
|-------------------|
| Iowa |
| Kongo |
| North Carolina |
| Renown |
| Revenge |
| Tennessee |
| Yamato |

6.1.4 e)

SELECT name

From Ships

WHERE name LIKE 'R%';

Result:

| name |
|-----------------|
| Ramillies |
| Renown |
| Repulse |
| Resolution |
| Revenge |
| Royal Oak |
| Royal Sovereign |

Problem 3

6.2.1 a)

SELECT name

FROM MovieStar

WHERE gender = 'Male' AND name IN (SELECT starName FROM StarsIn WHERE movieTitle = 'Titanic');

6.2.1 b)

SELECT starName

FROM StarsIn

WHERE movieTitle IN (SELECT title FROM Movies WHERE year = 1995 AND studioName = 'MGM');

6.2.1 d)

SELECT title

FROM Movies

WHERE length > (SELECT length FROM Movies WHERE title = 'Gone With the Wind');

Problem 4

6.2.2 a)

SELECT maker, speed

FROM Product, Laptop

WHERE Product.model = Laptop.model AND hd >= 30;

Result:

| maker | speed |
|-------|-------|
| A | 2.00 |
| A | 2.16 |
| A | 2.00 |
| B | 1.83 |
| E | 2.00 |
| E | 1.73 |
| E | 1.80 |
| F | 1.60 |
| F | 1.60 |
| G | 2.00 |

6.2.2 b)

```
SELECT PC.model, price
FROM Product, PC
WHERE Product.model = PC.model AND maker = 'B'
UNION
SELECT Laptop.model, price
FROM Product, Laptop
WHERE Product.model = Laptop.model AND maker = 'B'
UNION
SELECT Printer.model, price
FROM Product, Printer
WHERE Product.model = Printer.model AND maker = 'B';
```

Result:

| model | price |
|--------------|--------------|
| 1004 | 649 |
| 1005 | 630 |
| 1006 | 1049 |
| 2007 | 1429 |

6.2.2 c)

```
SELECT maker
FROM Product
WHERE type = 'laptop'
EXCEPT
SELECT maker
FROM Product
WHERE type = 'pc';
```

Result:

| maker |
|--------------|
| F |
| G |

6.2.2 e)

```
SELECT pc1.model, pc2.model
```

```
FROM PC pc1, PC pc2
```

```
WHERE pc1.speed = pc2.speed AND pc1.ram = pc2.ram AND pc1.model < pc2.model;
```

Result:

| pc1.model | pc2.model |
|-----------|-----------|
| 1004 | 1012 |

Problem 5

6.2.3 a)

```
SELECT name
```

```
FROM Ships, Classes
```

```
WHERE Classes.class=Ships.class AND displacement>35000;
```

Result:

| name |
|----------------|
| Iowa |
| Missouri |
| New Jersey |
| Wisconsin |
| North Carolina |
| Washington |
| Musashi |
| Yamato |

6.2.3 b)

```
SELECT name, displacement, numguns
FROM Classes, Ships, Outcomes
WHERE Classes.class = Ships.class AND Ships.name = Outcomes.ship AND
battle='Guadalcanal';
```

Result:

| name | displacement | numguns |
|-------------|---------------------|----------------|
| Washington | 37000 | 9 |
| kirishima | 32000 | 8 |

6.2.3 d)

```
SELECT country
FROM classes
WHERE type='bb'
INTERSECT
SELECT country
FROM classes
WHERE type='bc';
```

Result:

| country |
|----------------|
| Japan |
| Gt. Britain |

Problem 6

6.3.1 a)

```
SELECT maker
FROM Product
WHERE model IN (SELECT model FROM PC WHERE speed >= 3.0);
```

```
SELECT maker
FROM Product
WHERE EXISTS (SELECT model FROM PC WHERE speed >= 3.0 AND Product.model =
PC.model);
```

6.3.1 c)

```
SELECT model
FROM Laptop
WHERE Laptop.speed < ANY(SELECT speed FROM PC);
```

```
SELECT model
FROM Laptop
WHERE EXISTS(SELECT speed FROM PC WHERE PC.speed > Laptop.seed);
```

Problem 7

6.3.2 b)

```
SELECT class
FROM Ships
WHERE EXISTS (SELECT * FROM Outcomes WHERE Ships.name = Outcomes.ship AND
result = 'sunk');
```

```
SELECT DISTINCT C.class
FROM Classes C, Ships S
WHERE S.name IN (select O.ship FROM Outcomes O where O.result = 'sunk');
```

6.3.2 c)

```
SELECT name
FROM Ships
WHERE Ship.class IN(SELECT class FROM Classes WHERE bore = 16);
```

```
SELECT name
FROM Ships
WHERE EXISTS(SELECT class FROM Classes WHERE Classes.class = Ships.class AND
bore = 16);
```

6.3.2 d)

```
SELECT battle
FROM Outcomes
WHERE Outcomes.ship IN(SELECT name FROM Ships WHERE class = 'Kongo');
```

```
SELECT battle
FROM Outcomes
WHERE Outcomes.ship = ANY(SELECT name FROM Ships WHERE class = 'Kongo');
```

Problem 8

6.3.7 a)

In cross join it returns all rows in one table join to all rows in another table with or without a match.

6.3.7 b)

The Natural full outer join will give the following tuples:

- What is in both StarsIn and MovieStar
- What is in StarsIn but not in MovieStar
- What is not in StarsIn but is in MovieStar

6.3.7 c)

The full outer join returns the rows matched and unmatched from both left and right tables joined with the condition.