

# HW9 Solution

## 7.1.3

```
ALTER TABLE Product  
    ADD PRIMARY KEY (model);
```

```
ALTER TABLE PC  
    ADD FOREIGN KEY (model) REFERENCES Product (model);
```

```
ALTER TABLE Laptop  
    ADD FOREIGN KEY (model) REFERENCES Product (model);
```

```
ALTER TABLE Printer  
    ADD FOREIGN KEY (model) REFERENCES Product (model);
```

### 7.2.2

a)

```
CREATE TABLE Laptop (  
    ...  
    speed          DECIMAL(4,2)    CHECK (speed >= 2.0)  
    ...  
);
```

b)

```
CREATE TABLE Printer (  
    ...  
    type           VARCHAR(10)  
        CHECK (type IN ('laser', 'ink-jet', 'bubble-jet'))  
    ...  
);
```

c)

```
CREATE TABLE Product (  
    ...  
    type           VARCHAR(10)  
        CHECK (type IN('pc', 'laptop', 'printer'))  
    ...  
);
```

d)

```
CREATE TABLE Product (  
    ...  
    model          CHAR(4)  
        CHECK (model IN (SELECT model FROM PC  
                        UNION ALL  
                        SELECT model FROM laptop  
                        UNION ALL  
                        SELECT model FROM printer))  
    ...  
);
```

### 7.4.1

a)

```
CREATE ASSERTION CHECK  
    (NOT EXISTS  
        (  
            (SELECT maker FROM Product NATURAL JOIN PC)  
            INTERSECT  
            (SELECT maker FROM Product NATURAL JOIN Laptop)  
        )  
    );
```

### 7.5.2

b)

```
CREATE TRIGGER NewPrinterTrigger
AFTER INSERT ON Printer
REFERENCING
    NEW ROW AS NewRow,
    NEW TABLE AS NewStuff
FOR EACH ROW
WHEN (NOT EXISTS (SELECT * FROM Product
                  WHERE Product.model = NewRow.model))
DELETE FROM Printer
    WHERE (model, color, type, price) IN NewStuff;
```