



Problem 1:

```
CREATE TABLE customer(  
    customerID    NUMBER(4),  
    customerName  VARCHAR2(50),  
    customerSince DATE,  
    CONSTRAINT customerID_pk PRIMARY KEY(customerID)  
);
```

```
SQL> CREATE TABLE customer(  
2     customerID    NUMBER(4),  
3     customerName  VARCHAR2(50),  
4     customerSince DATE,  
5     CONSTRAINT customerID_pk PRIMARY KEY(customerID)  
6 );  
  
Table created.  
  
SQL> DESC customer;  
Name                               Null?      Type  
-----  
CUSTOMERID                         NOT NULL   NUMBER(4)  
CUSTOMERNAME                       NULL       VARCHAR2(50)  
CUSTOMERSINCE                      NULL       DATE
```

Problem 2:

```
INSERT INTO customer VALUES(1008, 'New Customer', sysdate);  
SELECT * FROM customer;
```

```
SQL> INSERT INTO customer VALUES(1008, 'New Customer', sysdate);  
  
1 row created.  
  
SQL> SELECT * FROM customer;  
  
CUSTOMERID  CUSTOMERNAME                                CUSTOMERS  
-----  
1008        New Customer                                24-JUN-20
```



Problem 3:

```
CREATE TABLE orders(  
    orderID NUMBER(8),  
    orderDate DATE,  
    shippingMethod VARCHAR2(25),  
    customerID NUMBER(4),  
    CONSTRAINT orderID_pk PRIMARY KEY(orderID),  
    CONSTRAINT customerID_fk FOREIGN KEY(customerID) REFERENCES customer(customerID)  
);
```

Run SQL Command Line

```
SQL> CREATE TABLE orders(  
2     orderID NUMBER(8),  
3     orderDate DATE,  
4     shippingMethod VARCHAR2(25),  
5     customerID NUMBER(4),  
6     CONSTRAINT orderID_pk PRIMARY KEY(orderID),  
7     CONSTRAINT customerID_fk FOREIGN KEY(customerID) REFERENCES customer(customerID)  
8 );
```

Table created.

```
SQL> DESC orders
```

Name	Null?	Type
ORDERID	NOT NULL	NUMBER(8)
ORDERDATE		DATE
SHIPPINGMETHOD		VARCHAR2(25)
CUSTOMERID		NUMBER(4)



Problem 4:

```
INSERT INTO orders VALUES(12345678, sysdate, '2-Day', 1008);  
--Generates error message due to non-existent primary key  
INSERT INTO orders VALUES(88888888, sysdate, '2-Day', 1009);  
SELECT * FROM orders;
```

```
SQL> INSERT INTO orders VALUES(12345678, sysdate, '2-Day', 1008);  
1 row created.  
  
SQL>  
SQL> --Generates error message due to non-existent primary key  
SQL> INSERT INTO orders VALUES(88888888, sysdate, '2-Day', 1009);  
INSERT INTO orders VALUES(88888888, sysdate, '2-Day', 1009)  
*  
ERROR at line 1:  
ORA-02291: integrity constraint (STUDENT.CUSTOMERID_FK) violated - parent key  
not found  
  
SQL>  
SQL> SELECT * FROM orders;  
  
ORDERID ORDERDATE SHIPPINGMETHOD CUSTOMERID  
-----  
12345678 24-JUN-20 2-Day 1008
```

Problem 5:

The second INSERT statement contains a foreign key value of 1009, which means that a parent record having this customerID value of 1009 must exist. This is part of the referential integrity. Since we inserted only one record in the customer table having a customerID value of 1008 this INSERT statement fails with the message that no parent key was found.