Scilab Assignment 1

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Q1.

1)

```
--> A= [1 2 3;4 3 1;5 2 4]
 A =    1.   2.   3.
           4.   3.   1.
           5.   2.   4.

--> det(A)
 ans = -33.

--> inv(A)
 ans = -0.3030303   0.0606061   0.2121212
             0.3333333   0.3333333 -0.3333333
             0.2121212 -0.2424242   0.1515152
```

2)

```
--> D= [1 2 7;8 3 1]
 D =   1.   2.   7.
          8.   3.   1.
```

```
--> det(D)
det: Wrong type for input argument #1: Square matrix
expected.

--> inv(D)
inv: Argument 1: Square matrix expected.
```

Q2)

1)

```
--> A= [1 2 3;4 3 1;5 2 4]
 A = 1.   2.   3.
        4.   3.   1.
        5.   2.   4.

--> rref(A)
 ans = 1.   0.   0.
            0.   1.   0.
            0.   0.   1.

--> rank(A)
 ans = 3.
```

2)

```
--> B= [8 6 3;7 3 5]
 B = 8.   6.   3.
        7.   3.   5.
```

```
--> rref(B)
 ans = 1.   0.   1.1666667
           0.   1.  -1.0555556

--> rank(B)
 ans =   2.
```

Q3)

1)

```
--> A= [1 2 -1 0;1 3 1 2;4 2 1 0;6 1 0 1]
 A = 1.   2.  -1.   0.
        1.   3.   1.   2.
        4.   2.   1.   0.
        6.   1.   0.   1.

--> rank(A)
 ans =   4.
```

As Rank =Number of Variables, the given system is linearly independent.

2)

```
-->  A= [1 -1 1;2 1 1;3 0 2]
 A =    1.  -1.   1.
           2.   1.   1.
           3.   0.   2.
```

```
--> rank(A)
 ans = 2.
```

As Rank is less than Number of Variables the given system is linearly dependent.