Students: Peter A. Dranishnikov
Lab #: 1
EEL 4685C section 01
Due date: Spring of 2019 of 01/22, 17:00

```
%Part 1a
[1,2,3,5,8,13,21]

ans =

     1     2     3     5     8    13    21

[10; 20; 30; 40]

ans =

    10
    20
    30
    40

%Part 1c
[1, 5, 10; 12, 15, 18]

ans =

     1     5    10
    12    15    18

%Part 1d
[1, 2, 3; 6, 5, 4; 7, 8, 9; 0, 0, 1]

ans =

     1     2     3
     6     5     4
     7     8     9
     0     0     1

%Part 1e
[1, 0, 0, 0; 0, 2, 0, 0; 0, 0, 3, 0; 0, 0, 0, 4]

ans =

     1     0     0     0
     0     2     0     0
     0     0     3     0
```

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```
     0     0     0     4

%Part 2a
[0:5:30]

ans =

     0     5    10    15    20    25    30

%Part 2b
[10:10:40]'

ans =

    10
    20
    30
    40

%Part 2c
[0:10:90]

ans =

     0    10    20    30    40    50    60    70    80    90

%Part 2d
[10:-1:0]

ans =

    10     9     8     7     6     5     4     3     2     1     0

%Part 2e
[10:-2:2]'

ans =

    10
     8
     6
     4
     2
```

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```
%Part 3 initial input
data = reshape([1:1:30],6,5)'

data =

     1     2     3     4     5     6
     7     8     9    10    11    12
    13    14    15    16    17    18
    19    20    21    22    23    24
    25    26    27    28    29    30

%Part 3a
data(3,2)

ans =

    14

%Part 3b
data(4,4)

ans =

    22

%Part 3c
data(4,:)

ans =

    19    20    21    22    23    24

%Part 3d
data(:,4)

ans =

     4
    10
    16
    22
    28

%Part 3e
```

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```
data(3:4,:)

ans =

    13    14    15    16    17    18
    19    20    21    22    23    24

%Part 3f
data(3:5,2:5)

ans =

    14    15    16    17
    20    21    22    23
    26    27    28    29

%Part 3g
data(5, 6:-1:1)

ans =

    30    29    28    27    26    25

%Part 3h
data([2, 4, 1, 2], 3:5)

ans =

     9    10    11
    21    22    23
     3     4     5
     9    10    11

%Part 3i
data([1,3], [1, 3, 4])

ans =

     1     3     4
    13    15    16

%Part 3j
data(1:2, [2, 1, 2, 3, 3, 5])
```

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```
ans =

     2     1     2     3     3     5
     8     7     8     9     9    11

%Part 4a
g = 32 %ft / s^2

g =

    32

v = 100 %ft / s

v =

   100

theta = [5:10:85] %degrees

theta =

     5    15    25    35    45    55    65    75    85

d = (v^2 * sin(2.*theta)) / g

d =

 -170.0066 -308.7599  -81.9921  241.8408  279.3740  -13.8258
-290.6581 -223.3989  108.3280

%Part 4b
T = 27 %deg Farenheit

T =

    27

v = [0:2:20] %mph

v =

     0     2     4     6     8    10    12    14    16    18    20
```

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```
twc = 35.74 + 0.6215 * T - 35.75 * v.^0.16 + 0.4275 * T * v.^0.16

twc =

   52.5205   25.4738   22.3015   20.2761   18.7572   17.5300
16.4943   15.5947   14.7972   14.0796   13.4261

%Part 4c
c1 = linspace(0.10, 0.01, 10)

c1 =

    0.1000    0.0900    0.0800    0.0700    0.0600    0.0500
0.0400    0.0300    0.0200    0.0100

c2 = linspace(0.6, 0.06, 10)

c2 =

    0.6000    0.5400    0.4800    0.4200    0.3600    0.3000
0.2400    0.1800    0.1200    0.0600

ceq = (c1.*c2)./(c1+c2)

ceq =

    0.0857    0.0771    0.0686    0.0600    0.0514    0.0429
0.0343    0.0257    0.0171    0.0086

diary off
```