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```
%Ryan Plante
%Matlab Prelim 1
%3/24/18
```

Question 1

```
%a
a = [1 2 3];
b = [3 4 5];

distance = sqrt(sum((a-b).^2))

%b
m1 = [1 2 3 4 5; 5 6 7 8 9]

m2 = m1(:, 2:4)
```

```
distance =

    3.4641


m1 =

     1     2     3     4     5
     5     6     7     8     9


m2 =

     2     3     4
     6     7     8
```

Question 2

```
ece271 = [% ID, Scores
 101, 98;
 121, 50;
```

```
 157, 43;
 189, 80;
 176, 75;
 107, 99;
 120, 30;
 175, 61;
 135, 60]

ece498 = [% ID, Scores
 101, 21;
 131, 70;
 157, 93;
 189, 100;
 176, 75;
 107, 99;
 120, 30;
 175, 61; ]

%a
index = find(ece271(:,2) == max(ece271(:,2)));
highestScoringStudentID = ece271(index, 1)

%b
id = [ece271(:,1); ece498(:,1)];
id = unique(id);
scores = NaN*ones(length(id),3);
scores(:,1) = id (:,1);

[c, ia, ib] = intersect(id, ece271(:,1));
scores(ia, 2) = ece271(ib,2);
[c, ia, ib] = intersect(id, ece498(:,1));
%Student ID | ece271 score | ece498 score
scores(ia,3) = ece498(ib, 2)


ece271 =

   101    98
   121    50
   157    43
   189    80
   176    75
   107    99
   120    30
   175    61
   135    60


ece498 =

   101    21
   131    70
   157    93
   189   100
```

```
   176    75
   107    99
   120    30
   175    61


highestScoringStudentID =

   107


scores =

   101    98    21
   107    99    99
   120    30    30
   121    50   NaN
   131   NaN    70
   135    60   NaN
   157    43    93
   175    61    61
   176    75    75
   189    80   100
```

Question 3

```
%a
a = {'abc', [1 2 3; 4 5 6]; 4, [9 8 7; 6 5 4; 3 2 1]};
a{1, 2}(2, :) = a{1, 2}(2, :)+4

%b
a = reshape(a, 1, 4)


a =

  2×2 cell array

    'abc'    [2×3 double]
    [  4]    [3×3 double]


a =

  1×4 cell array

    'abc'    [4]    [2×3 double]    [3×3 double]
```

Question 4

```
data = readtable('myPatients.dat');
```

```
avgAge = mean(data{:,3})
```

```
avgAge =

    41
```

Question 5

```
%define whatever single row/column matrix you want here, this one
 covers
%all function conditions
matrix = [-2 -1 0 1 2 3 4 5 6 7 8 9 10];
myFunction(matrix)
```

```
ans =

     4     1   NaN     2     4     6     8    10     9    10    11
 12    13
```

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