```matlab
% Luis Kligman --- lab 1

% Given matrices
A = [1, -1, 2; -3, 1, 1; 1, 4, -6]
B = [.5, .35, .15; .35, .6, .05; .15, .05, .8]
C = [1, -1; 1,2; -3, 2]


% --- PART ONE ---
A + A
A + B
B + A
% B + C  % This line gives an error because the matrices have
        % dimensions that do not match

% B + C  % This line gives an error because the matrices have
        % dimensions that do not match
1 + B
A - A
A - B
B - A
-(B - A)

% --- PART TWO ---
A'
B'
C' * A
% A * C'  % The first matrix does not match the dimensions of the
        % second matrix
(A')'
(A' + A)/2

% --- PART THREE ---
% All previous code that MATLAB refused to calculate has a
% comment consisting of validation for the refusal

% --- PART FOUR ---
A + B
B + A
A + B == B + A
% The results of these two equations
% prove that A + B = B + A
A * B
B * A
A * B == B * A
% The results of these two equations prove that
% A * B ≠ B * A

% --- PART FIVE ---
A - B
B - A
A - B == B - A
```

```
% A - B == B - A are not equal
% The relationship is that the signs of the values will be swapped
% in one they will be negative, in the next they must be postive or zero

% --- PART SIX ---
range = 1:25
matrix = range' * range


A =

     1    -1     2
    -3     1     1
     1     4    -6


B =

    0.5000    0.3500    0.1500
    0.3500    0.6000    0.0500
    0.1500    0.0500    0.8000


C =

     1    -1
     1     2
    -3     2


ans =

     2    -2     4
    -6     2     2
     2     8   -12


ans =

    1.5000   -0.6500    2.1500
   -2.6500    1.6000    1.0500
    1.1500    4.0500   -5.2000


ans =

    1.5000   -0.6500    2.1500
   -2.6500    1.6000    1.0500
    1.1500    4.0500   -5.2000


ans =

    1.5000    1.3500    1.1500
```

```
    1.3500      1.6000      1.0500
    1.1500      1.0500      1.8000


ans =

     0        0        0
     0        0        0
     0        0        0


ans =

    0.5000    -1.3500      1.8500
   -3.3500     0.4000      0.9500
    0.8500     3.9500     -6.8000


ans =

   -0.5000     1.3500     -1.8500
    3.3500    -0.4000     -0.9500
   -0.8500    -3.9500      6.8000


ans =

    0.5000    -1.3500      1.8500
   -3.3500     0.4000      0.9500
    0.8500     3.9500     -6.8000


ans =

     1       -3        1
    -1        1        4
     2        1       -6


ans =

    0.5000     0.3500     0.1500
    0.3500     0.6000     0.0500
    0.1500     0.0500     0.8000


ans =

    -5      -12       21
    -5       11      -12


ans =
```

```
     1     -1     2
    -3      1     1
     1      4    -6


ans =

    1.0000   -2.0000    1.5000
   -2.0000    1.0000    2.5000
    1.5000    2.5000   -6.0000


ans =

    1.5000   -0.6500    2.1500
   -2.6500    1.6000    1.0500
    1.1500    4.0500   -5.2000


ans =

    1.5000   -0.6500    2.1500
   -2.6500    1.6000    1.0500
    1.1500    4.0500   -5.2000


ans =

  3×3 logical array

   1   1   1
   1   1   1
   1   1   1


ans =

    0.4500   -0.1500    1.7000
   -1.0000   -0.4000    0.4000
    1.0000    2.4500   -4.4500


ans =

   -0.4000    0.4500    0.4500
   -1.4000    0.4500    1.0000
    0.8000    3.1000   -4.4500


ans =

  3×3 logical array

   0   0   0
```

```
    0    0    0
    0    0    1


ans =

    0.5000   -1.3500    1.8500
   -3.3500    0.4000    0.9500
    0.8500    3.9500   -6.8000


ans =

   -0.5000    1.3500   -1.8500
    3.3500   -0.4000   -0.9500
   -0.8500   -3.9500    6.8000


ans =

  3×3 logical array

   0   0   0
   0   0   0
   0   0   0


range =

  Columns 1 through 13

     1     2     3     4     5     6     7     8     9    10    11    12
13

  Columns 14 through 25

    14    15    16    17    18    19    20    21    22    23    24    25


matrix =

  Columns 1 through 13

     1     2     3     4     5     6     7     8     9    10    11    12
13
     2     4     6     8    10    12    14    16    18    20    22    24
26
     3     6     9    12    15    18    21    24    27    30    33    36
39
     4     8    12    16    20    24    28    32    36    40    44    48
52
     5    10    15    20    25    30    35    40    45    50    55    60
65
     6    12    18    24    30    36    42    48    54    60    66    72
```

```
78
    7     14     21     28     35     42     49     56     63     70     77     84
91
    8     16     24     32     40     48     56     64     72     80     88     96
104
    9     18     27     36     45     54     63     72     81     90     99    108
117
   10     20     30     40     50     60     70     80     90    100    110    120
130
   11     22     33     44     55     66     77     88     99    110    121    132
143
   12     24     36     48     60     72     84     96    108    120    132    144
156
   13     26     39     52     65     78     91    104    117    130    143    156
169
   14     28     42     56     70     84     98    112    126    140    154    168
182
   15     30     45     60     75     90    105    120    135    150    165    180
195
   16     32     48     64     80     96    112    128    144    160    176    192
208
   17     34     51     68     85    102    119    136    153    170    187    204
221
   18     36     54     72     90    108    126    144    162    180    198    216
234
   19     38     57     76     95    114    133    152    171    190    209    228
247
   20     40     60     80    100    120    140    160    180    200    220    240
260
   21     42     63     84    105    126    147    168    189    210    231    252
273
   22     44     66     88    110    132    154    176    198    220    242    264
286
   23     46     69     92    115    138    161    184    207    230    253    276
299
   24     48     72     96    120    144    168    192    216    240    264    288
312
   25     50     75    100    125    150    175    200    225    250    275    300
325

  Columns 14 through 25

   14     15     16     17     18     19     20     21     22     23     24     25
   28     30     32     34     36     38     40     42     44     46     48     50
   42     45     48     51     54     57     60     63     66     69     72     75
   56     60     64     68     72     76     80     84     88     92     96    100
   70     75     80     85     90     95    100    105    110    115    120    125
   84     90     96    102    108    114    120    126    132    138    144    150
   98    105    112    119    126    133    140    147    154    161    168    175
  112    120    128    136    144    152    160    168    176    184    192    200
  126    135    144    153    162    171    180    189    198    207    216    225
  140    150    160    170    180    190    200    210    220    230    240    250
  154    165    176    187    198    209    220    231    242    253    264    275
  168    180    192    204    216    228    240    252    264    276    288    300
```

182	195	208	221	234	247	260	273	286	299	312	325
196	210	224	238	252	266	280	294	308	322	336	350
210	225	240	255	270	285	300	315	330	345	360	375
224	240	256	272	288	304	320	336	352	368	384	400
238	255	272	289	306	323	340	357	374	391	408	425
252	270	288	306	324	342	360	378	396	414	432	450
266	285	304	323	342	361	380	399	418	437	456	475
280	300	320	340	360	380	400	420	440	460	480	500
294	315	336	357	378	399	420	441	462	483	504	525
308	330	352	374	396	418	440	462	484	506	528	550
322	345	368	391	414	437	460	483	506	529	552	575
336	360	384	408	432	456	480	504	528	552	576	600
350	375	400	425	450	475	500	525	550	575	600	625