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```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% ENGR 133
% Program Description
%
% Assigment Information
%    Assignment:  PS MA2, Problem 1
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%    Paired Partner: Collin Gernhardt, cgernhar@purdue.edu
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%    Contributor:  Name, login@purdue [repeat for each]
%    Our contributor(s) helped us:
%      [ ] understand the assignment expectations without
%          telling us how they will approach it.
%      [ ] understand different ways to think about a solution
%          without helping us plan our solution.
%      [ ] think through the meaning of a specific error or
%          bug present in our code without looking at our code.
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

INITIALIZATION

```
A = zeros(4,4)
vals = [ 1 3 2 4; 5 6 7 8; 9 10 11 12; 13 15 14 16]


A =

     0     0     0     0
```

```
        0       0       0       0
        0       0       0       0
        0       0       0       0


vals =

        1       3       2       4
        5       6       7       8
        9      10      11      12
       13      15      14      16
```

COPY & CONCATENATION

```
M = vals(2:3, 2:3)
C = vals(1:1, 2:3)
D = vals(4:4, 2:3)
E = [vals(1,1) D vals(1,4)]
F = [vals(4,1) C vals(4,4)]


M =

        6       7
       10      11


C =

        3       2


D =

       15      14


E =

        1      15      14       4


F =

       13       3       2      16
```

REPLACE MATRIX ELEMENTS

```
A = [E; 0 M(1,:) 0; 0 M(2,:) 0; F]
A = [E; vals(3,4) M(1,:) vals(3,1); vals(2,4) M(2,:) vals(2,1); F]


A =


     1    15    14     4
     0     6     7     0
     0    10    11     0
    13     3     2    16


A =


     1    15    14     4
    12     6     7     9
     8    10    11     5
    13     3     2    16
```

FINAL MATRIX

```
x = sum(A)
G = [A;x]
Y = sum(G,2)
H = [G Y]
H(5,5) = H(1,1) +H(2,2) +H(3,3)+H(4,4)


x =


    34    34    34    34


G =


     1    15    14     4
    12     6     7     9
     8    10    11     5
    13     3     2    16
    34    34    34    34


Y =
```

```
              34
              34
              34
              34
             136


H =

         1      15      14       4      34
        12       6       7       9      34
         8      10      11       5      34
        13       3       2      16      34
        34      34      34      34     136


H =

         1      15      14       4      34
        12       6       7       9      34
         8      10      11       5      34
        13       3       2      16      34
        34      34      34      34      34
```

FORMATTED TEXT DISPLAY

```
fprintf('After doing step 8.e, the value in the center of H is %d \n',
 H(3,3))
fprintf('After doing step 8.e, the value in the upper left of H is %d
\n', H(1,1))
fprintf('and the value in the upper right of H is %d \n', H(1,5))
fprintf('After doing step 8.e, the value in the lower left of H is %d
\n', H(5,1))
fprintf('and the value in lower right of H is %d \n', H(5,5))

After doing step 8.e, the value in the center of H is 11
After doing step 8.e, the value in the upper left of H is 1
and the value in the upper right of H is 34
After doing step 8.e, the value in the lower left of H is 34
and the value in lower right of H is 34
```

ACADEMIC INTEGRITY STATEMENT

We have not used source code obtained from any other unauthorized source, either modified or unmodified. Neither have we provided access to our code to another. The script we are submitting is our own original work.

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