ME 1020 Engineering Programming with MATLAB

Problem 2.10:

10. Consider the following arrays.

$$A = \begin{bmatrix} 1 & 4 & 2 \\ 2 & 4 & 100 \\ 7 & 9 & 7 \\ 3 & \pi & 42 \end{bmatrix} \qquad B = \ln(A)$$

Write MATLAB expressions to do the following.
a. Select just the second row of **B**.
b. Evaluate the sum of the second row of **B**.
c. Multiply the second column of **B** and the first column of **A** element by element.
d. Evaluate the maximum value in the vector resulting from element-by-element multiplication of the second column of **B** with the first column of **A**.
e. Use element-by-element division to divide the first row of **A** by the first three elements of the third column of **B**. Evaluate the sum of the elements of the resulting vector.

```matlab
% Problem 2.10
disp('Problem 2.10: Scott Thomas')
format short
A =[1 4 2; 2 4 100; 7 9 7; 3 pi 42]
B=log(A)

% Part (a)
disp('Part (a): Select the second row of B')
C=B(2,:)

% Part (b)
disp('Part (b): Evaluate the sum of the second row of B')
D=sum(C)

% Part (c)
disp('Part (c): multiply the second column of B and the first column of')
disp('A element by element')

E=B(:,2).*A(:,1)

% Part (d)
disp('Part (d): Find maximum of elxel mult 2nd col. B by first col. A')
F=max(E)

% Part (e)
disp('Part (e): Use elxel division: divide first row of A by first three ')
```

```
disp('elements of the third column of B. Sum the elements of the ')
disp('resulting vector')

H = A(1,:) % first row of A
I = B(1:3,3) %first three elemnts of third column of B
J = I' %turn I into a row vector
G = H./J

K = sum(G)
```

Problem 2.10: Scott Thomas

A =

     1.0000   4.0000   2.0000
     2.0000   4.0000 100.0000
     7.0000   9.0000   7.0000
     3.0000   3.1416   42.0000

B =

          0   1.3863   0.6931
     0.6931   1.3863   4.6052
     1.9459   2.1972   1.9459
     1.0986   1.1447   3.7377

Part (a): Select the second row of B

C =

     0.6931   1.3863   4.6052

Part (b): Evaluate the sum of the second row of B

D =

     6.6846

Part (c): multiply the second column of B and the first column of
A element by element

E =

     1.3863
     2.7726
    15.3806
     3.4342

Part (d): Find maximum of elxel mult 2nd col. B by first col. A

F =

    15.3806

Part (e): Use elxel division: divide first row of A by first three
elements of the third column of B. Sum the elements of the
resulting vector
```

```
H =

     1     4     2


I =

    0.6931
    4.6052
    1.9459


J =

    0.6931    4.6052    1.9459


G =

    1.4427    0.8686    1.0278


K =

    3.3391
```