Math 1313
Homework 7
Section 3.4

Use the following information to answer questions 1 – 5.
The following represent matrices and the dimension of each is also stated below.

A is a matrix of size 1X2
B is a matrix of size 3X1
C is a matrix of size 3X2
D is a matrix of size 2X4
E is a matrix of size 5X3

1. The product CA is defined.
    a. True
    b. False

2. The product AD is defined.
    a. True
    b. False

3. The product BD is defined.
    a. True
    b. False

4. If the product DA is defined. The dimension of the product would be
    a. 2X2
    b. 4X1
    c. 1X4
    d. 2X4
    e. Not defined

5. If the product EB is defined. The dimension of the product would be
    a. 5X5
    b. 3X5
    c. 3X3
    d. 5X1
    e. Not defined

6. Find the product, if possible.

$$\begin{bmatrix} 11 & -3 & -5 \\ 8 & -7 & 3 \\ 6 & 15 & 20 \end{bmatrix}\begin{bmatrix} 7 & 8 \\ 3 & 5 \\ -1 & -1 \end{bmatrix}$$

    a. Not possible

b. $\begin{bmatrix} 73 & 78 \\ 32 & 26 \\ 67 & 103 \end{bmatrix}$

c. $\begin{bmatrix} 77 & 88 \\ -21 & -35 \\ -20 & -20 \end{bmatrix}$

d. $\begin{bmatrix} 73 & 32 & 67 \\ 78 & 26 & 103 \end{bmatrix}$

e. $\begin{bmatrix} 77 & 88 \\ 56 & 64 \\ 42 & 48 \end{bmatrix}$

7. The choices for problem number 14 from the book are given below.

a. Not possible

b. $\begin{bmatrix} 72 & 64 \\ -15 & -40 \\ -7 & -17 \end{bmatrix}$

c. $\begin{bmatrix} 42 & -15 & -7 \\ 64 & -40 & -17 \end{bmatrix}$

d. $\begin{bmatrix} 20 & 15 \\ 16 & 7 \end{bmatrix}$

e. $\begin{bmatrix} 106 & -99 & 185 \\ 58 & -55 & 106 \\ -14 & 13 & -24 \end{bmatrix}$

8. The choices for problem number 22 from the book are given below.

a. Not Possible

b. $\begin{bmatrix} 119 & 105 \\ 136 & 197 \\ 168 & 371 \end{bmatrix}$

c. $\begin{bmatrix} 73 & 78 \\ 32 & 26 \\ 67 & 103 \end{bmatrix}$

d. $\begin{bmatrix} 163 & 65 & 49 \\ 248 & 213 & 231 \end{bmatrix}$

e. $\begin{bmatrix} -90 & -99 \\ -114 & 11 \\ 6 & 19 \end{bmatrix}$

9. The choices for problem number 26 part a from the book are given below.

a. $G = \begin{bmatrix} 81 & 87 & 83 & 85 & 71 & 90 \\ 74 & 99 & 83 & 100 & 84 & 93 \\ 86 & 92 & 96 & 87 & 90 & 95 \end{bmatrix}$, $P = \begin{bmatrix} 0.15 \\ 0.15 \\ 0.15 \\ 0.25 \\ 0.10 \\ 0.20 \end{bmatrix}$

b. $G = \begin{bmatrix} 81 & 87 & 83 & 85 & 71 & 90 \\ 74 & 99 & 83 & 100 & 84 & 93 \\ 86 & 92 & 96 & 87 & 90 & 95 \end{bmatrix}$, $P = \begin{bmatrix} 15 \\ 15 \\ 15 \\ 25 \\ 10 \\ 20 \end{bmatrix}$

c. $G = \begin{bmatrix} 8.1 & 8.7 & 8.3 & 8.5 & 7.1 & 9 \\ 7.4 & 9.9 & 8.3 & 10 & 8.4 & 9.3 \\ 8.6 & 9.2 & 9.6 & 8.7 & 9 & 9.5 \end{bmatrix}$, $P = \begin{bmatrix} 15 \\ 15 \\ 15 \\ 25 \\ 10 \\ 20 \end{bmatrix}$

d. $G = \begin{bmatrix} 81 & 74 & 86 \\ 87 & 99 & 92 \\ 83 & 83 & 96 \\ 85 & 100 & 87 \\ 71 & 84 & 90 \\ 90 & 93 & 95 \end{bmatrix}$, $P = \begin{bmatrix} 15 \\ 15 \\ 15 \\ 25 \\ 10 \\ 20 \end{bmatrix}$

e. $G = \begin{bmatrix} 81 & 74 & 86 \\ 87 & 99 & 92 \\ 83 & 83 & 96 \\ 85 & 100 & 87 \\ 71 & 84 & 90 \\ 90 & 93 & 95 \end{bmatrix}$, $P = \begin{bmatrix} 0.15 \\ 0.15 \\ 0.15 \\ 0.25 \\ 0.10 \\ 0.20 \end{bmatrix}$

10. The choices for problem number 26 part b from the book are given below.

a. $\begin{bmatrix} 84 \\ 90.4 \\ 90.85 \end{bmatrix}$

b. $\begin{bmatrix} 84 & 90.4 & 90.8 \end{bmatrix}$

c. $\begin{bmatrix} 8400 \\ 9040 \\ 9085 \end{bmatrix}$

d. $\begin{bmatrix} 497 \\ 533 \\ 546 \end{bmatrix}$

e. $\begin{bmatrix} 82.83 & 88.83 & 91 \end{bmatrix}$