Data605-Week1-Discussion1-kamath

Vinayak Kamath

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Exercises

C10† Let $A = \begin{bmatrix} 1 & 4 & -3 \\ 6 & 3 & 0 \end{bmatrix}$, $B = \begin{bmatrix} 3 & 2 & 1 \\ -2 & -6 & 5 \end{bmatrix}$ and $C = \begin{bmatrix} 2 & 4 \\ 4 & 0 \\ -2 & 2 \end{bmatrix}$. Let $\alpha = 4$ and $\beta = 1/2$. Perform the following calculations: (1) $A + B$, (2) $A + C$, (3) $B^t + C$, (4) $A + B^t$, (5) βC, (6) $4A - 3B$, (7) $A^t + \alpha C$, (8) $A + B - C^t$, (9) $4A + 2B - 5C^t$.

Figure 1: Exercise- Matrix - C10

---

(1) A + B

```
A+B
```

```
##      [,1] [,2] [,3]
## [1,]    4    6   -2
## [2,]    4   -3    5
```

(2) A + C

```
#A+C
```

A and C are not the same size.A+C is not defined.

(3) Bˆt + C

```
B1 + C
```

```
##      [,1] [,2]
## [1,]    5    2
## [2,]    6   -6
## [3,]   -1    7
```

(4) A + Bˆt

```
#A + B1
```

A and Bˆt are not the same size. A + Bˆt is not defined.

(5) (BetA)C

```
 Beta * C
```

```
##      [,1] [,2]
## [1,]    1    2
## [2,]    2    0
## [3,]   -1    1
```

(6) 4A - 3B

```
4 * A - 3 * B
```

```
##      [,1] [,2] [,3]
## [1,]   -5   10  -15
## [2,]   30   30  -15
```

(7) Aˆt + (Alpha)C

```
A1 + (Alpha * C)
```

```
##      [,1] [,2]
## [1,]    9   22
## [2,]   20    3
## [3,]  -11    8
```

(8) A + B -Cˆt

```
A + B - C1
```

```
##      [,1] [,2] [,3]
## [1,]    2    2    0
## [2,]    0   -3    3
```

(9) 4A + 2B - 5Cˆt.

```
4*A + 2*B - 5 * C1
```

```
##      [,1] [,2] [,3]
## [1,]    0    0    0
## [2,]    0    0    0
```
