matrix\_question

2024-04-17

# Define matrices  
A <- matrix(1:9, nrow = 3)  
B <- matrix(c(1, 2, 3, 4), nrow = 2)  
C <- matrix(c(2, 0, 1, 2), nrow = 2)  
A

## [,1] [,2] [,3]  
## [1,] 1 4 7  
## [2,] 2 5 8  
## [3,] 3 6 9

B

## [,1] [,2]  
## [1,] 1 3  
## [2,] 2 4

C

## [,1] [,2]  
## [1,] 2 1  
## [2,] 0 2

# 1.Sum of matrices B and C  
sum\_BC <- B + C  
sum\_BC

## [,1] [,2]  
## [1,] 3 4  
## [2,] 2 6

# 2.Product of matrices B and C (matrix multiplication)  
product\_BC <- B %\*% C  
product\_BC

## [,1] [,2]  
## [1,] 2 7  
## [2,] 4 10

# 3.Calculate the sum of each row in matrix A  
row\_sums\_A <- apply(A, 1, sum)  
row\_sums\_A

## [1] 12 15 18

# 4.Calculate the mean value of each column in matrix A  
mean\_col <- colMeans(A)  
mean\_col

## [1] 2 5 8

# 5.Set all elements to 0 if divisible by 2  
A[A %% 2 == 0] <- 0  
A

## [,1] [,2] [,3]  
## [1,] 1 0 7  
## [2,] 0 5 0  
## [3,] 3 0 9