

# Linear Algebra Operations

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## 1 Linear Algebra

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### 1.1 Matrix Multiplication

Multiply Together a 3 by 2 matrix and a 2 by 1 vector

```
ar_row_one <- c(-1,+1)
ar_row_two <- c(-3,-2)
ar_row_three <- c(0.35,0.75)
mt_n_by_2 <- rbind(ar_row_one, ar_row_two, ar_row_three)
```

```
ar_row_four <- c(3,4)
```

```
# Matrix Multiplication
```

```
mt_out <- mt_n_by_2 %*% ar_row_four
print(mt_n_by_2)
```

```
##           [,1] [,2]
## ar_row_one  -1.00  1.00
## ar_row_two  -3.00 -2.00
## ar_row_three  0.35  0.75
```

```
print(ar_row_four)
```

```
## [1] 3 4
```

```
print(mt_out)
```

```
##           [,1]
## ar_row_one   1.00
## ar_row_two -17.00
## ar_row_three  4.05
```