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```
library(pracma)
```

```
A <- matrix(c(18, -15, 33, -15,  
             -4, 8, -6, 6,  
             -9, 9, -16, 9,  
             5, -6, 9, -4),  
            ncol=4, nrow=4, byrow=T)
```

```
B <- A-2*diag(ncol(A))  
rref(B)
```

```
##      [,1] [,2] [,3] [,4]  
## [1,]    1    0    3    0  
## [2,]    0    1    1    1  
## [3,]    0    0    0    0  
## [4,]    0    0    0    0
```

The row-reduced matrix has a rank of 2, with 2 free variables.

The size of A is 4, so the geometric multiplicity will be $4 - 2 = 2$.