In [42]:
```
# Oleh
# Muhammad Pandu Widodo 17523055
# Dimas Fajar Imanto 17523193
```

Pemanggilan Library Matlib untuk bisa menggunakan function *powermethod*

In [ ]:
```
library('matlib')
```

In [26]:
```
mat1 <- matrix(c(4,-5,2,-3),2,2,TRUE)
x1 <- c(1,0)
```

4	-5
2	-3

1 0

In [101]:
```
pm1 <- power_method(mat1,v = x1, maxiter = 5, verbose = TRUE)
pm1

eigenvector1 <- unlist(pm1['vector'])
eigenvalue1 <- unlist(pm1['value'])
signif(eigenvector1,3)
signif(eigenvalue1,3)
```

```
iter 1 : vector= 0.8944272 0.4472136
iter 2 : vector= 0.9486833 0.3162278
iter 3 : vector= 0.919145 0.3939193
iter 4 : vector= 0.9333456 0.3589791
```

$vector

0.9333456
0.3589791

$value
2.09278350515464
$iter
5

vector1 0.933
vector2 0.359

value: 2.09

Sehingga hasil dari matriks pertama, Eigenvector bernilai **0.933** dan **0.359**. Dan Eigenvalue bernilai **2.09**

In [28]:
```
mat2 <- matrix(c(0,11,-5,
                 -2,17,-7,
                 -4,26,-10),3,3,TRUE)
x2 <- c(1,1,0)
mat2
x2
```

0	11	-5
-2	17	-7
-4	26	-10

1 1 0

In [102]:
```
pm2 <- power_method(mat2,v = x2, maxiter=5, verbose = TRUE)
pm2

eigenvector1 <- unlist(pm2['vector'])
eigenvalue1 <- unlist(pm2['value'])
signif(eigenvector1,3)
signif(eigenvalue1,3)
```

```
iter 1 : vector= 0.3818156 0.5206576 0.7636311
iter 2 : vector= 0.3468668 0.4982269 0.7946404
iter 3 : vector= 0.3347332 0.4915957 0.80392
iter 4 : vector= 0.3294046 0.4889547 0.8077227
```

$vector

0.3294046
0.4889547
0.8077227

$value

4.09896979522965

$iter

5

vector1	0.329
vector2	0.489
vector3	0.808

value: 4.1

Sehingga hasil dari matriks kedua, Eigenvector bernilai **0.329**, **0.489** dan **0.808**. Dan Eigenvalue bernilai **4.1**