

Sustitución adelante/atrás

Equipo 9

27 de febrero de 2019

Hacia atrás

```
r1 <- c(4, -1, 2, 3)
r2 <- c(0, -2, 7, -4)
r3 <- c(0, 0, 6, 5)
r4 <- c(0, 0, 0, 3)
(A <- rbind(r1, r2, r3, r4))
```

```
##      [,1] [,2] [,3] [,4]
## r1     4   -1    2    3
## r2     0   -2    7   -4
## r3     0    0    6    5
## r4     0    0    0    3
```

```
n <- nrow(A)
b <- c(20, -7, 4, 6)
```

```
x <- c()
x[n] <- b[n]/A[n,n]
for(i in (n-1):1)
{
  x[i] <- (b[i] - A[i,(i+1):n]%*%x[(i+1):n])/A[i,i]
}
```

```
x
```

```
## [1]  3 -4 -1  2
```

Hacia adelante

```
r1 <- c(3,0,0,0)
r2 <- c(-1,1,0,0)
r3 <- c(3,-2,-1,0)
r4 <- c(1,-2,6,2)
(A <- rbind(r1, r2, r3, r4))
```

```
##      [,1] [,2] [,3] [,4]
## r1     3    0    0    0
## r2    -1    1    0    0
## r3     3   -2   -1    0
## r4     1   -2    6    2
```

```
n <- nrow(A)
b <- c(5, 6, 4, 2)
```

```
x <- c()
x[1] <- b[1]/A[1,1]
```

```
for(i in 2:n)
{
  x[i] <- (b[i] - x[1:(i-1)]%*%A[i,1:(i-1)]) / A[i,i]
}
```

```
x
```

```
## [1] 1.666667 7.666667 -14.333333 50.833333
```