

# 20180528Joo

May 28, 2018

```
In [1]: install.packages("rgl")
```

Installing package into /Users/JooWoojin/Library/R/3.5/library  
(as lib is unspecified)

The downloaded binary packages are in  
/var/folders/vw/3g7dtc6d62q56w0v5d81t4w40000gn/T//RtmpwRVdu8/downloaded\_packages

```
In [86]: library(rgl)
```

```
ax+by+cz=0(x,y,z)(a,b,c)
1.(a,b,c)=(3,1,1)
```

```
In [88]: x <- rnorm(100)
         y <- rnorm(100)
         z <- -3*x-y
         plot3d(x,y,z)
         arrow3d(0,c(3,1,1),col="gold",barblen=.05, lwd=0.5)
```

```
2.(a,b,c)=(1,-1,1)
```

```
In [89]: x <- rnorm(100)
         y <- rnorm(100)
         z <- -x+y
         plot3d(x,y,z)
         arrow3d(0,c(1,-1,1),col="gold",barblen=.05, lwd=0.5)
```

```
3.(a,b,c)=(5,-2,3)
```

```
In [90]: x <- rnorm(100)
         y <- rnorm(100)
         z <- (-5*x+2*y)/3
         plot3d(x,y,z)
         arrow3d(0,c(5,-2,3),col="gold",barblen=.05, lwd=0.5)
```