P8131 HW9

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Load packages

```
library(survival)
```

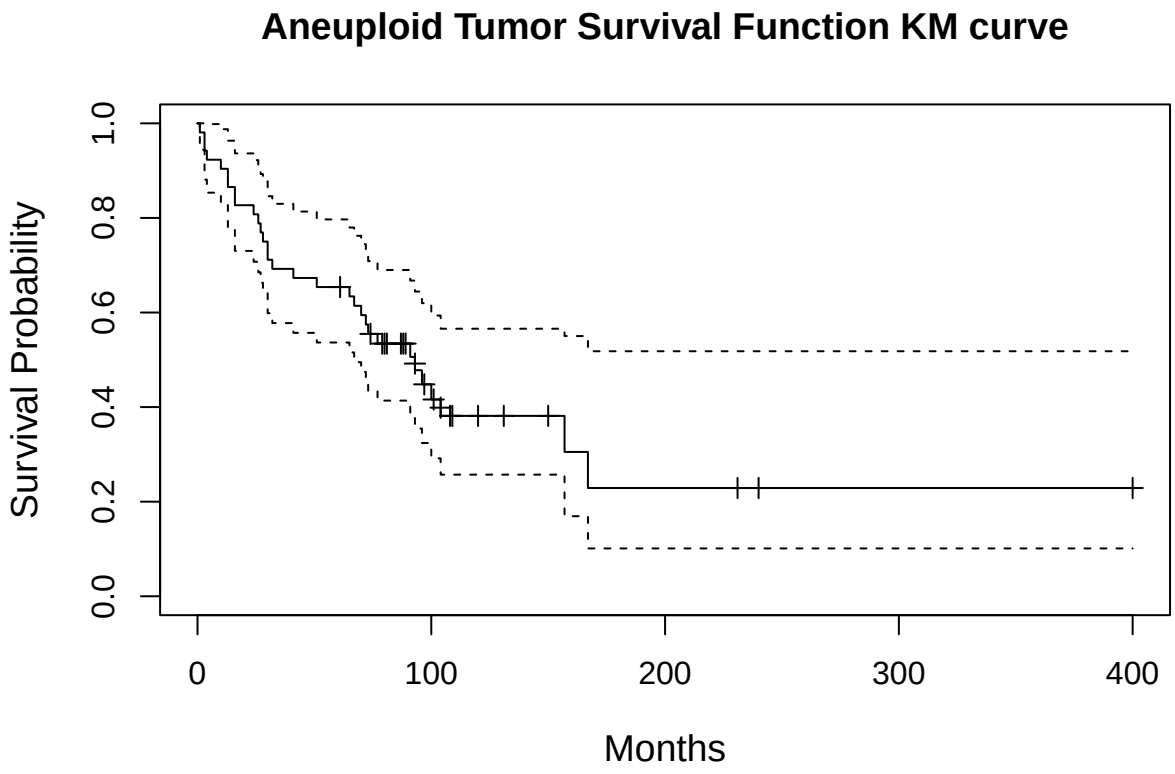
Load data

```
data("tongue", package = "KMsurv")
# type 1 = Aneuploid Tumor, type 2 = Diploid Tumor
```

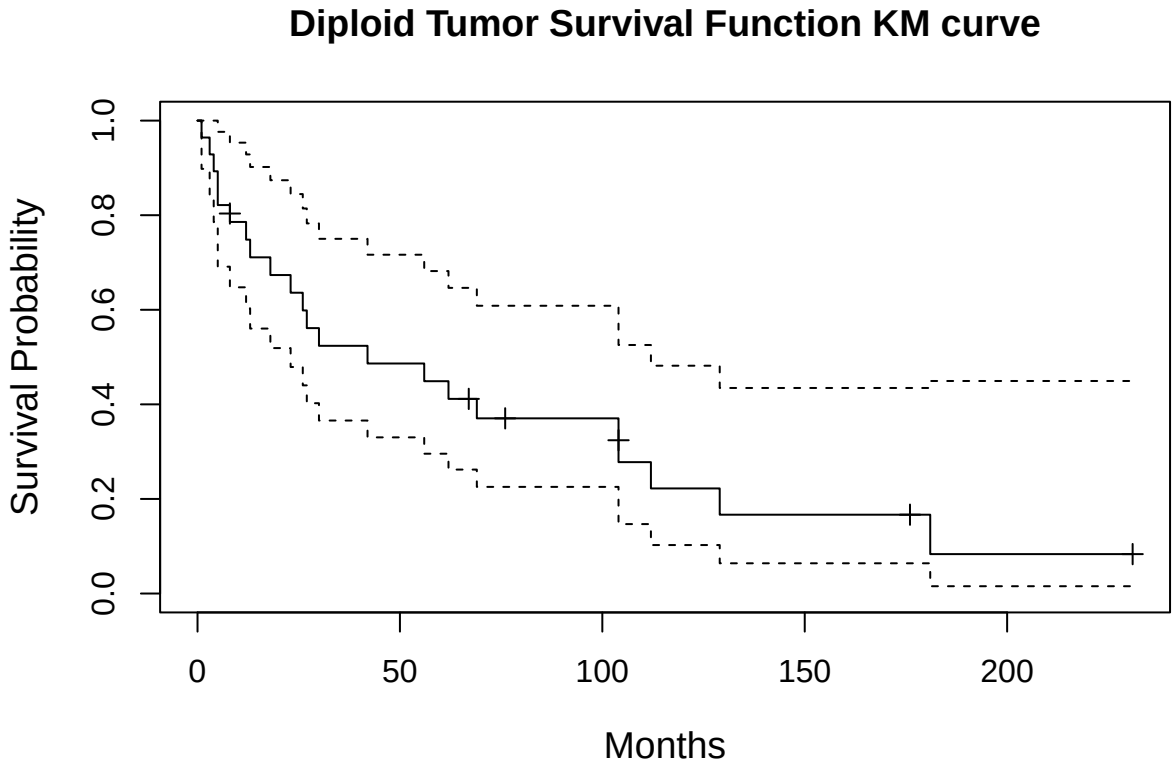
```
Surv(tongue$time, tongue$delta, type='right') # 0: censored, 1: observed death
```

```
##  [1]   1    3    3    4   10   13   13   16   16   24   26   27   28   30   30
## [16]  32   41   51   65   67   70   72   73   77   91   93   96  100  104  157
## [31] 167   61+  74+  79+  80+  81+  87+  87+  88+  89+  93+  97+ 101+ 104+ 108+
## [46] 109+ 120+ 131+ 150+ 231+ 240+ 400+   1    3    4    5    5    8   12   13
## [61]  18   23   26   27   30   42   56   62   69  104  104  112  129  181    8+
## [76]  67+  76+ 104+ 176+ 231+
```

```
km_an = survfit(Surv(time, delta) ~ 1, data = subset(tongue, type == 1), conf.type='log')
plot(km_an, mark.time = TRUE,
     xlab = "Months", ylab = "Survival Probability", main = "Aneuploid Tumor Survival Function KM curve
     cex.lab = 1.2, cex.main = 1.2)
```




```
km_di = survfit(Surv(time, delta) ~ 1, data = subset(tongue, type == 2), conf.type='log')
plot(km_di, mark.time = TRUE,
     xlab = "Months", ylab = "Survival Probability", main = "Diploid Tumor Survival Function KM curve",
     cex.lab = 1.2, cex.main = 1.2)
```



Obtain survival rate at the 1 year mark with 95% CI

```r
summary(km_an, time = 52)
```

```
## Call: survfit(formula = Surv(time, delta) ~ 1, data = subset(tongue,
##     type == 1), conf.type = "log")
##
##  time n.risk n.event survival std.err lower 95% CI upper 95% CI
##    52     34      18    0.654   0.066        0.537        0.797
```

```r
# time = 52 (52 weeks in a year); n.event: the cumulative number of deaths at the time point
summary(km_di, time = 52)
```

```
## Call: survfit(formula = Surv(time, delta) ~ 1, data = subset(tongue,
##     type == 2), conf.type = "log")
##
##  time n.risk n.event survival std.err lower 95% CI upper 95% CI
##    52     13      14    0.486  0.0961         0.33        0.716
```