Kaplan-Meier Calculations

$$\widehat{p}_j = \frac{n_j - d_j}{n_j} \qquad \widehat{S}(t) = \prod_{t_j \le t} \widehat{p}_j$$

```
> rm(list=ls()); options(scipen=999)
> wdata = read.table("http://www.utstat.utoronto.ca/brunner/data/legal/Weibull.data2.txt")
> head(wdata)
  Time Uncensored
1 1.60          0
2 0.60          0
3 3.03          1
4 2.90          0
5 3.60          1
6 2.76          1
> Time = wdata$Time; Uncensored = wdata$Uncensored; length(Time)
[1] 275
>
> timz = sort(unique(Time)); length(timz)
[1] 226
> timz[1:40]
 [1] 0.01 0.07 0.08 0.11 0.14 0.18 0.20 0.22 0.26 0.30 0.34 0.35 0.36 0.38 0.43 0.45 0.53
[18] 0.60 0.61 0.65 0.69 0.72 0.73 0.75 0.84 0.89 0.96 0.97 1.02 1.06 1.07 1.10 1.12 1.15
[35] 1.16 1.18 1.24 1.25 1.27 1.30
>
> tab = table(Time,Uncensored); tab
      Uncensored
Time    0 1
  0.01  3 0
  0.07  1 0
  0.08  1 0
  0.11  1 0
  0.14  1 0
  0.18  1 0
  0.2   1 0
  0.22  1 0
  0.26  1 0
  0.3   2 0
  0.34  0 1
  0.35  2 0
  0.36  1 0
  0.38  1 0
  0.43  1 0
  0.45  1 0
  0.53  1 0
  0.6   2 0
  0.61  0 1
  0.65  1 0
  0.69  1 0
  0.72  1 0
  0.73  1 0
  0.75  1 0
  0.84  1 0
  0.89  1 0
  0.96  1 0
  0.97  1 0
  1.02  1 0
  1.06  1 0
  1.07  1 1
```

$$\widehat{p}_j = \frac{n_j - d_j}{n_j} \qquad \widehat{S}(t) = \prod_{t_j \le t} \widehat{p}_j$$

```
> tab = table(Time,Uncensored); tab

      Uncensored
Time    0 1
  0.01  3 0
  0.07  1 0
  0.08  1 0
  0.11  1 0
  0.14  1 0
  0.18  1 0
  0.2   1 0
  0.22  1 0
  0.26  1 0
  0.3   2 0
  0.34  0 1   n_j = 275 - (3+1+1+1+1+1+1+1+1+2) = 262
  0.35  2 0
  0.36  1 0
  0.38  1 0
  0.43  1 0
  0.45  1 0
  0.53  1 0
  0.6   2 0
  0.61  0 1   n_j = 275 - sum(tab[1:18,]) = 252
  0.65  1 0
  0.69  1 0
  0.72  1 0
  0.73  1 0
  0.75  1 0
  0.84  1 0
  0.89  1 0
  0.96  1 0
  0.97  1 0
  1.02  1 0
  1.06  1 0
  1.07  1 1   n_j = 275 - sum(tab[1:30,]) = 240
```