Survival HW 2

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```r
library(knitr)
library(survival)
```

With censoring:

```r
data <- data.frame(ID = c(1:21),
                   Time = c(10, 7, 32, 23, 22, 6, 16, 34, 32, 25,
                            11, 20, 19, 6, 17, 35, 6, 13, 9, 6, 10),
                   Censor = c(1, 1, 0, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0,
                              1, 0, 0, 1, 1, 0, 0, 0))
attach(data)

data.surv <- survfit(Surv(time = Time, event = Censor) ~ 1, data = data)

kable(data.frame(summary(data.surv)[sapply(summary(data.surv), length)==7]))
```
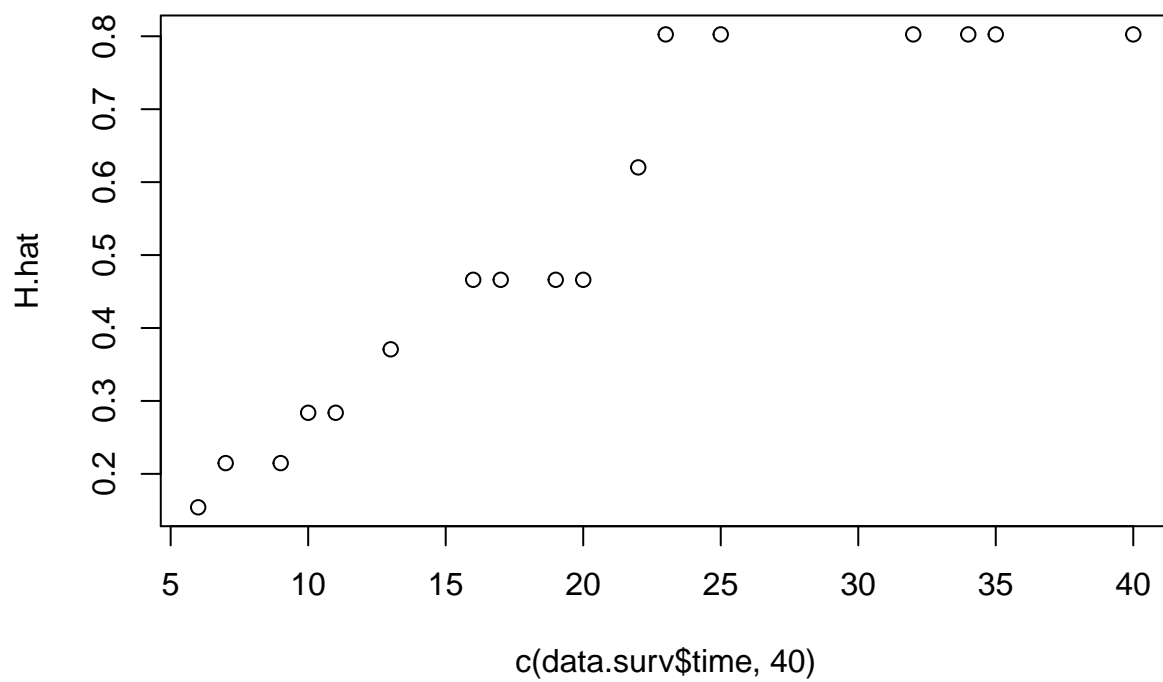
	time	n.risk	n.event	n.censor	surv	std.err	upper	lower	table
records	6	21	3	1	0.8571429	0.0763604	1.0000000	0.7198171	21
n.max	7	17	1	0	0.8067227	0.0869353	0.9964437	0.6531242	21
n.start	10	15	1	1	0.7529412	0.0963497	0.9675748	0.5859190	21
events	13	12	1	0	0.6901961	0.1068147	0.9347692	0.5096131	9
median	16	11	1	0	0.6274510	0.1140539	0.8959949	0.4393939	23
0.95LCL	22	7	1	0	0.5378151	0.1282338	0.8582008	0.3370366	16
0.95UCL	23	6	1	0	0.4481793	0.1345915	0.8073720	0.2487882	NA

```r
plot(data.surv)
```
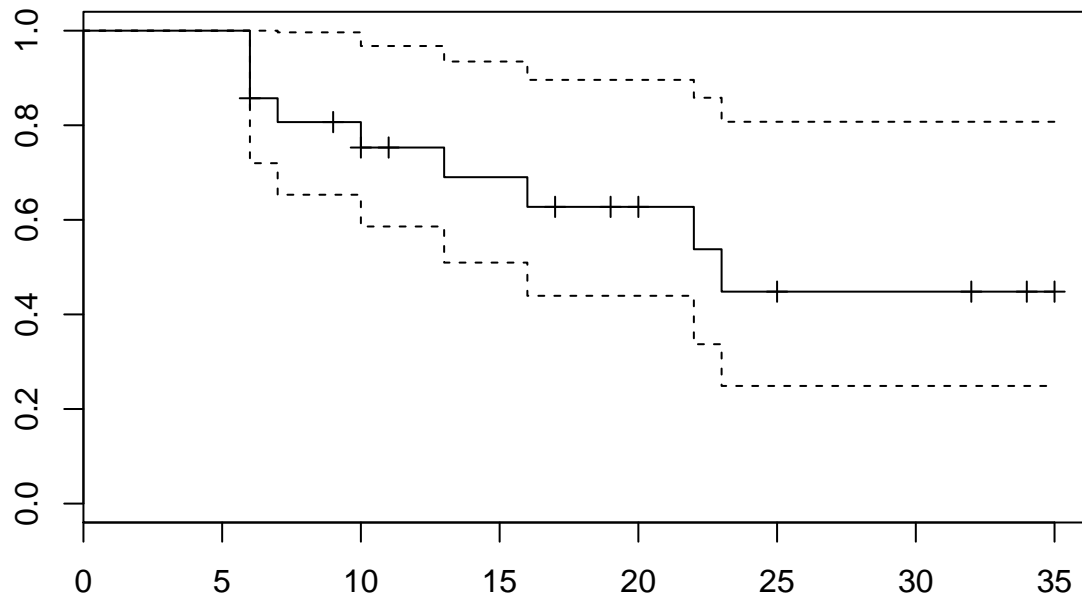
```
H.hat <- -log(data.surv$surv)
H.hat <- c(H.hat, tail(H.hat, 1))

plot(H.hat ~ c(data.surv$time, 40))
```
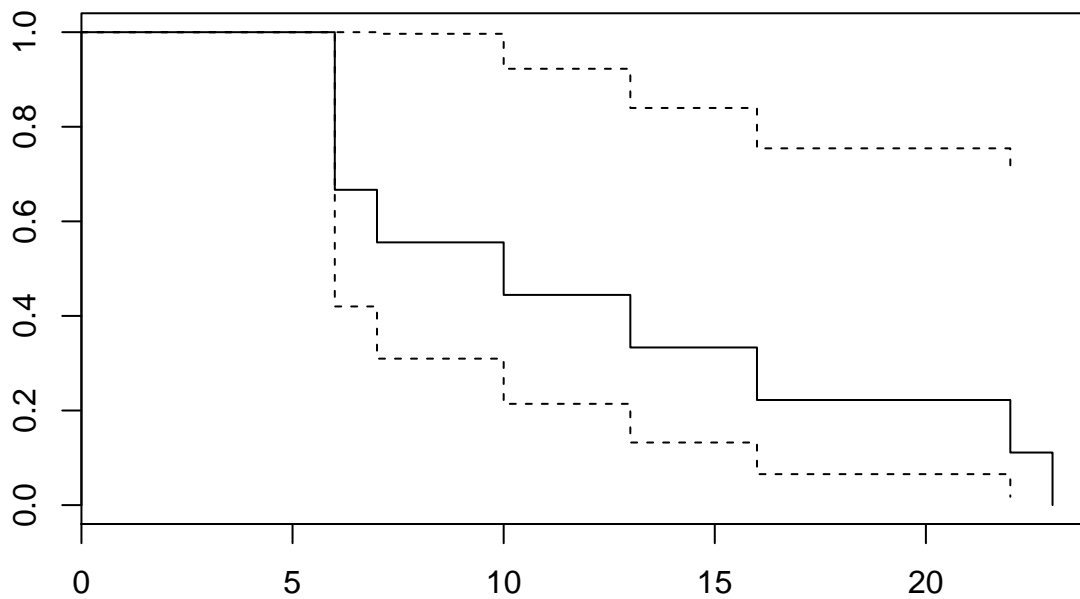

Without censoring:

```
# subset to only have uncensored data
data <- data[Censor==1,]

data.surv <- survfit(Surv(time = Time, event = Censor) ~ 1, data = data)
```

```r
kable(data.frame(summary(data.surv)[sapply(summary(data.surv), length)==7]))
```

	time	n.risk	n.event	n.censor	surv	std.err	upper	lower	table
records	6	9	3	0	0.6666667	0.1571348	1.0000000	0.4200284	9
n.max	7	6	1	0	0.5555556	0.1656347	0.9965676	0.3097050	9
n.start	10	5	1	0	0.4444444	0.1656347	0.9226597	0.2140885	9
events	13	4	1	0	0.3333333	0.1571348	0.8397287	0.1323179	9
median	16	3	1	0	0.2222222	0.1385799	0.7544056	0.0654591	10
0.95LCL	22	2	1	0	0.1111111	0.1047566	0.7051443	0.0175080	6
0.95UCL	23	1	1	0	0.0000000	NaN	NA	NA	NA

```r
plot(data.surv)
```



```r
H.hat <- -log(data.surv$surv)
H.hat <- c(H.hat, tail(H.hat, 1))

plot(H.hat ~ c(data.surv$time, 40))
```