Math 473 Quiz 4 Spring 2021 Name_____

	coef	exp(coef)	se(coef)	z	p
ph.ecog	0.4117	1.509	0.14267	2.89	0.0039
pat.karno	-0.0146	0.986	0.00718	-2.03	0.0420
wt.loss	-0.0129	0.987	0.00685		

1) The lung cancer data has the *time* until death or censoring. *ph.ecog* = Ecog performance score 0-4, *pat.karno* = patient's assessment of their karno score and *wt.loss* = weight loss in last 6 months.

a) Find the ESP and $\hat{h}_i(t)$ if $\boldsymbol{x} = (1.0, 80.0, 7.0)$.

b) Find a 95% CI for β_2.

c) Do a 4 step test for $Ho : \beta_2 = 0$.

d) Do a 4 step test for $Ho : \beta_3 = 0$.

2) For the same data as in 1), R output says Likelihood ratio test=22.8.
Do a 4 step test for $Ho : \boldsymbol{\beta} = \mathbf{0}$.

```
             coef exp(coef) se(coef)      z    p
age       0.01444      1.01 0.010508  1.374 0.17
meal.cal -0.00016      1.00 0.000240 -0.666 0.51

Likelihood ratio test=2.97  on 2 df, p=0.227  n=181
(47 observations deleted due to missingness)
```

3) The above output is for the same data as 1), but now the model uses the predictors *age* and *meal.cal* = calories consumed at meals excluding beverages and snacks.
Do a 4 step test for $Ho : \boldsymbol{\beta} = \mathbf{0}$.