

Name \_\_\_\_\_

Student Number \_\_\_\_\_

### STA 312 f2023 Quiz 11

1. (3 points) Consider a proportional hazards regression with two explanatory variables: a quantitative variable  $x$ , and actual time  $t$ .

(a) Write the hazard function.

(b) What happens to  $e^{\beta_2 t}$ ?

2. (2 points) For the Area 51 data, you tested the effect of wearing a hat on the chances of being kidnapped by aliens. Fill in the table below. On your printout, circle the test statistic and  $p$ -value, and write “Question 2” beside them.

Chi-squared or $Z$ Statistic	$p$ -value	Reject $H_0$ at $\alpha = 0.05$ ? (Yes or No)

3. (2 points) In plain, non-statistical language, what do you conclude from the test above?

4. (3 points) For the **channing** data (survival in nursing homes), you plotted the estimated survival curves for male and female nursing home residents. Please attach the plot, and the code that produced it. Write “Question 4” beside the code.

**Please attach both printouts.** Make sure your name is on them.