What type of regression model is this?

$$Y_i \sim N(\beta_0 + \beta_1 x_i, \sigma^2)$$

What type of regression model is this?

$$Y_i \sim BER(\exp(\beta_0 + \beta_1 x_i) / [1+\exp(\beta_0 + \beta_1 x_i)])$$

What type of distribution is this?

$$Y_i \sim POI(\exp(\beta_0 + \beta_1 x_i))$$

What distribution does Y_i have in simple linear regression? Express as a function of x_i.

What distribution does Y_i have in logistic regression? Express as a function of x_i.

What distribution does Y_i have in Poisson regression? Express as a function of x_i.

Suppose both predictor and outcome are interval variables. What type of regression might be appropriate?

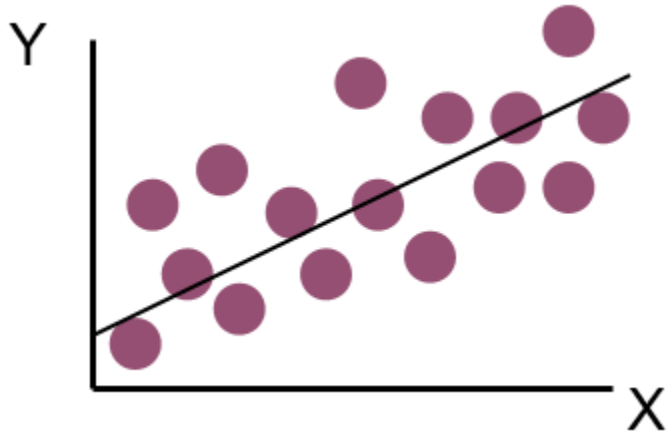
Suppose the predictor is nominal with 5 levels and the outcome is interval. What type of regression might be appropriate? How many binary 'dummy' predictors will be needed in the model?

Suppose the outcome is binary but the predictor interval. What type of regression might be appropriate?

Suppose the outcome and predictor are both binary. What type of regression might be appropriate?

When using Poisson regression for binary outcomes, why must ‘robust error estimates’ be used?

What regression model might be appropriate for this data? Specify the distribution of Y as a function of x.



True or false: Predictors must be normally distributed for ordinary linear regression.

True or false: A histogram of the outcomes should be approximately normally distributed in order to use ordinary linear regression?

Name at least one way that the parameters could be estimated for a regression model.

Why do researchers often not provide the estimate or confidence interval for the intercept in their models?

What is meant by relative risk of an event? What is meant by odds ratio?

When are relative risks and odds ratios similar? When are they quite different?

The follow code was run:

```
proc genmod data = subjectlevel;
    class Hypothermia(ref='No') StudySubjectID/param = ref;
    model INDNewIntracranBleed (ref='No')= Hypothermia LastBaselineFibrinogen / link = log dist = poisson;
    repeated subject = StudySubjectID;
run;
```

The following appears in the output:

Analysis Of GEE Parameter Estimates							
Empirical Standard Error Estimates							
Parameter		Estimate	Standard Error	95% Confidence Limits		Z	Pr > |Z|
Intercept		-0.7307	0.4982	-1.7072	0.2458	-1.47	0.1425
Hypothermia	Yes	0.6620	0.3270	0.0210	1.3029	2.02	0.0430
LastBaselineFibrinog		-0.0039	0.0026	-0.0090	0.0012	-1.51	0.1315

What type of regression is this? Note that the repeated statement ensures that robust estimators are used for the standard error of the estimators.

Interpret the relationship of hypothermia to intracranial bleeding. Include a confidence interval in your interpretation.

Interpret the relationship of fibrinogen to intracranial bleeding. Note that fibrinogen is reported in mg/dL.

The following code (which uses robust error estimates) was run:

```
proc genmod data = subjectlevel;
    class Hypothermia(ref='No') indicationECMO StudySubjectID/param = ref;
    model INDNewIntracranBleed (ref='No')= IndicationECMO / link = log dist = poisson;
    repeated subject = StudySubjectID;
run;
```

The following output was generated from the above code:

Analysis Of GEE Parameter Estimates							
Empirical Standard Error Estimates							
Parameter		Estimate	Standard Error	95% Confidence Limits		Z	Pr > |Z|
Intercept		-1.5208	0.1539	-1.8224	-1.2192	-9.88	<.0001
IndicationECMO	Cardiac	-0.1678	0.2676	-0.6924	0.3568	-0.63	0.5307
IndicationECMO	ECPR	-0.2710	0.4817	-1.2151	0.6731	-0.56	0.5737

What type of regression is this?

Interpret the relationship between the indication for ECMO and intracranial bleeding. Note that indication for ECMO is a nominal variable with three levels: Respiratory, Cardiac, and eCPR.