

1. For the following analyses, list the type of response variable (binomial or ratio scale), the number of ratio-scale explanatory variables, and the number of nominal scale (categorical) explanatory variables. Number = 0 if absent.

	Response	Ratio-scale	Categorical
Annual rate of shrinkage of coral reef area.	_____	_____	_____
Two-way ANOVA.	_____	_____	_____
Seed germination in 3 plots, one planted with 10 seed, the two other with 20 seeds each.	_____	_____	_____
Analysis of growth rate in relation to temperature in five microbial cultures.	_____	_____	_____
Sex ratio in relation to size (shell diameter) of slipper limpets.	_____	_____	_____
Growth rate of plants at 4 levels of exposure to CO ₂ , controlled for light and temperature.	_____	_____	_____
Randomized block design.	_____	_____	_____

2a. Assuming a probability of germination of $p_{\text{germinate}} = 0.5$ in each plot, calculate the expected number of germinations $E(N_{\text{germinate}}) = (p_{\text{germinate}})(N_{\text{planted}})$ and observed odds.

Plot:	<u>A</u>	<u>B</u>	<u>Control</u>
N_{planted}	<u>10</u>	<u>20</u>	<u>20</u>
$E(N_{\text{germinate}})$	_____	_____	_____
$N_{\text{germinate}}$	<u>4</u>	<u>2</u>	<u>1</u>
Odds	_____	_____	_____

2b.. Define response and explanatory variables, with symbols, to test whether germination rate (odds of germination) are the same in all three plots.

2c. Using symbols above, write a model to test whether the germination rate (odds of germination) are the same in all three plots.