**Predation Assignment**

The optimal flight-initiation distance, FID is that in which the probability of starving and predation are lowest, representing a balance between foraging and fleeing. In the spaces below please answer the questions using complete thoughts/sentences.

1. a) In excel, create a graph showing mean FIDs of each treatment (high and low resource) vs. the outcomes (alive and dead; an example of the type of graph you should make it below. **Do not submit this example graph, you must create your own**). Be sure to use appropriate captions for all figures (10 pts).
2. Conduct an appropriate statistical test to see if there is a significant difference between the **alive** FIDs of high and low resource abundance? (Hint: you are testing for a significant difference between two *population* means)
What are some of the ecological reasons that may explain this result? (15 pts)
3. Conduct an appropriate statistical test to see if there is a significant difference between the **dead** FIDs of high and low resource abundance? (Hint: you are testing for a significant difference between two *population* means)
What are some of the ecological reasons that may explain this result? (15 pts)

1. In excel, graph the mean number of balls collected vs. the outcomes for each treatment (high and low resource abundance; an example of the type of graph you should make it below. **Do not submit this example graph, you must create your own**). Be sure to use appropriate captions for all figures (10 pts).
2. Conduct an appropriate statistical test to see if there is a significant difference between the **alive** no. of balls collected of high vs. low resource abundance? (Hint: you are testing for a significant difference between two *population* means)
What are some of the ecological reasons that may explain this result? (15 pts)
3. Conduct an appropriate statistical test to see if there is a significant difference between the **dead** no. of balls collected of high vs. low resource abundance? (Hint: you are testing for a significant difference between two *population* means)
What are some of the ecological reasons that may explain this result? (15 pts)

1. How might FID change with changing (a) predation risk (For example, if the predator could run faster or there were multiple predators) (b) distance to cover? (For example, if both the distance from the predator to the prey, and the distance from the prey to the safe zone, were different. Consider both scenarios independently). Be sure to relate your answers in terms of effects on foraging efficiency and predation rates, both of which affect survival (10 pts).

1. In your own words, describe optimal foraging theory (OFT) and provide two different examples from the literature. Briefly describe how OFT applies in each example. Make sure you provide appropriate citations for your examples. (10 pts)