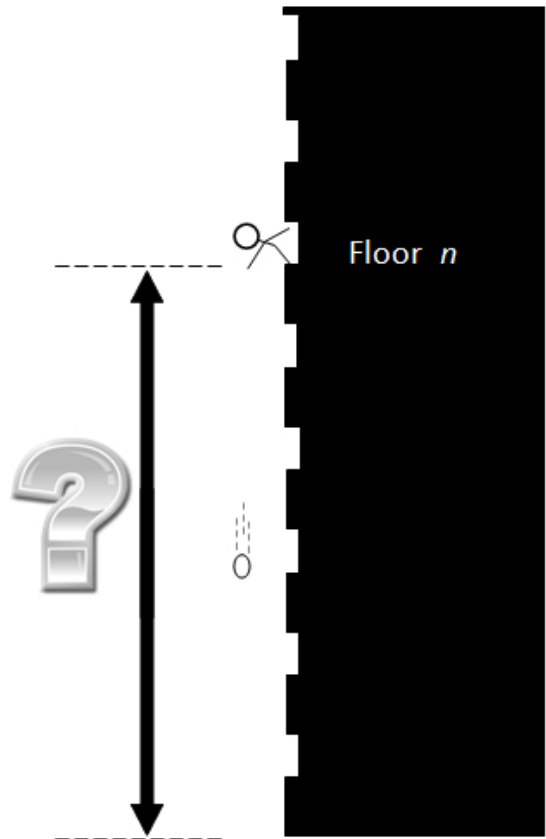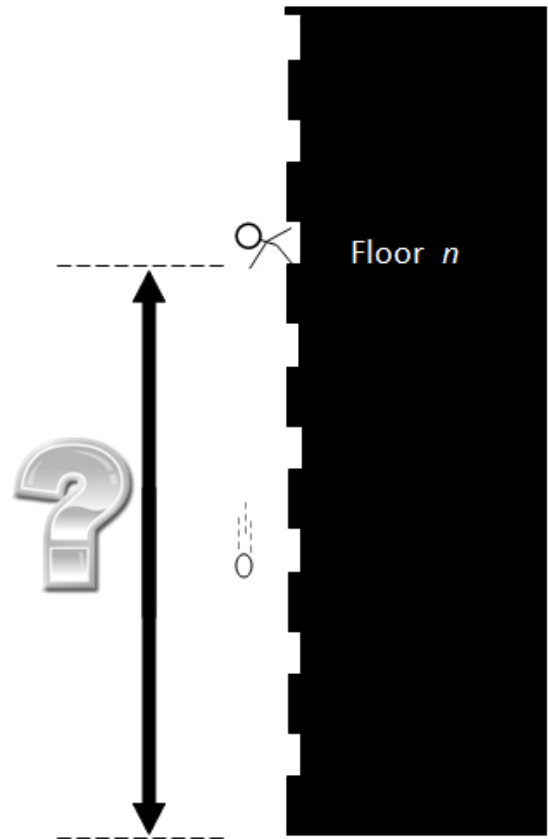# CHAMP Activity — November 10, 2015

THE EGG DROP PROBLEM: EXPLORATIONS IN SEARCH STRATEGIES

1. **Warm-up Question:** Consider the following situation. You have an egg and a 100 floor building. You would like to determine the highest floor you can drop the egg from without it breaking. Once the egg breaks, you are done - you can't collect any more information. What strategy should you use to determine the highest floor you can drop the egg on, without it breaking? What is the maximum number of times you will have to drop the egg?

Floor n

2. **Two eggs:** Here is a problem that has been used as a Google interview question. You have two eggs, identical to one another. You would like to know the highest floor of a 100 floor building you can drop them from without them breaking. How can you do this in the fewest drops possible?

Floor n

3. **As many eggs as we like:** What is the best strategy if we have as many eggs as we like?

4. **Varying the number of floors:** What is the best strategy if we have two eggs and 25 floors?