1. In the worse case, how many guesses would our guessing game take to get the right answer if we had no hints at all? Explain.

In the worse case, we need to take ten times to get the answer. It means we guess through all numbers once. So worse case it will be linear time complexity O(n), n is the range of number.

2. In the worst case, how many guesses does it take to get the right number if we get a hint of "higher or lower" when guessing numbers 1-10 and guess intelligently (always picking in the middle of the remaining set of numbers)?

If we are trying to guess a number between 1 and 10 and we receive a hint of "higher or lower" after each guess, and we are always picking the middle number of the remaining set of numbers, it would take a maximum of 4 guesses to get the correct number.

For example:
Answer=10
First guess: 5 (the answer is higher)
Second guess: 7 (the answer is higher)
Third guess: 9 (the answer is higher)
Fourth guess: 10 (got it)

Our approach is a binary search. The worst-case time complexity of the binary search is O(log n), where n is the number of elements in the array or list being searched. This is because in the worst-case scenario, the algorithm would have to repeatedly divide the search space in half until it finds the target element.