*From the graphs and graph algorithm quiz*
1.) Suppose \( E = \theta(V) \). What is the asymptotic running time of Kruskal's Algorithm utilizing a Fibonacci heap?

*From the graphs and graph algorithm quiz*
2.) Suppose \( E = \theta(V^2) \). What is the asymptotic running time of Prim's Algorithm utilizing a Fibonacci heap?

*From Linear Selection and Linear Sorting quiz*
3.) A tight upper bound on a comparison sort, in the worst case, is _____?

*From Binomial and Fibonacci Heaps quiz*
4.) One expects to delete a value in a Fibonacci heap in amortized \((\log n)\) time. Worst case time is _____?

*From midterm exam*
5.) Consider using counting sort to sort \( n \) number uniformly distributed over the range of zero to \( n^k \), with \( 0<k<1 \). The asymptotic complexity of the sort, in the simplest form, will be _____?

*From prerequisite exam*
6.) Consider a trinary heap stored in an array, with one-based indexing. The formula for finding the parent of a node stored at index \( i \) is ______?

*From midterm exam*
7.) In an efficient decision tree for the comparison sorting of \( n \) numbers, ____ is the smallest possible depth of a leaf, assuming the root is at depth 0.

*From prerequisite exam*
8.) Suppose a min-heap with \( n \) values is stored in an array \( a \). In the extractMin operation, which element immediately replaces the root element (prior to this new root being sifted down).

*From midterm exam*
9.) Suppose you use \( \log n \) buckets to bucket sort \( n \) numbers, uniformly distributed. _____ would be the expected running time if you used selection sort to sort the individual buckets.

*From the midterm exam*
10.) Suppose a dynamic array was implemented so that growing the array increased the capacity by 1000 elements. _____ is the amortized cost of the append operation.

*From the midterm exam*
11.) Suppose a dynamic array was implemented so that growing the array increased the capacity from \( n \) to \( (n \log n) \) elements. _____ is the amortized and _____ is the worst-case costs of the append operation.
2-theta(E)
3-unbounded
10-linear

THANKS!

*From the midterm*
12.) Consider a dynamic fillable array which grows by tripling in size. Let S represent the number of filled slots and E, the number of empty slots, and C, the capacity of the array. _____ is a valid equation for calculating the total cost incurred when insertion \((3^i)+1\) is made. Assume the actual cost of an insert when there is room is 1 and the actual cost of an insert when there is no room is \((3^i)+1\)