

Gamma

[Here is a video walkthrough of the solutions.](#)

Give the best and worst case runtime in $\Theta(\cdot)$ notation as a function of N . Your answer should be simple with no unnecessary leading constants or summations. Assume $f(N)$ returns a random number between 1 and $N/2$, inclusive, and does so in constant time.

```
1 static void gamma(int N) {
2     if (N <= 10) {
3         return;
4     }
5     for (int i = f(N); i < N; i += f(N)) {
6         gamma(i);
7     }
8 }
```

Best Case: $\Theta(\quad)$, Worst Case: $\Theta(\quad)$

Solution:

Best Case: $\Theta(\log(N))$, Worst Case: $\Theta(2^N)$