

# Asymptotic Analysis

For the following methods, determine asymptotic runtime in terms of n

```
1. void f1(int n){
    for(int i = n; i>0;i--){
        System.out.println("!");
    }
}
```

```
2. int f2(int n){
    if (n < 10) return n;
    else if(n < 1000) return f2(n-2);
    else return f2(n/2);
}
```

```
3. int f3(n){
    f(n,n);
}

int f(int n,int m){
    int sum = 0;
    if (n <= 2) {
        for(int i = 2; i < m; i=i*2){
            sum++;
        }
        return sum;
    }
    else return f(n/2, m)+f(n/2, m);
}
```

} log n

$O(n \lg n)$