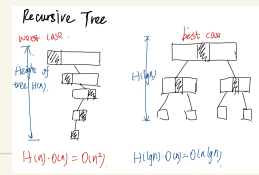


# 2101 Algo Review

# Sorting Algo



	Best Case	Worst Case	Average
Insertion	$n^2$	$n^2$	$n^2$
Merge	$n \lg n$	$n \lg n$	$n \lg n$
Quick	$n \lg n$	$n^2$	$n \lg n$
Heap	$n \lg n$	$n \lg n$	$n \lg n$

Best Case

$n$  in-order input

$n$  in-order input

split list into half  
 $n \lg n$

Worst Case

$n^2$

$n \lg n$   $W(n) = 2W(\frac{n}{2}) + n - 1$

pivot-value is the biggest/smallest  
 $n^2$

Average

$n^2$

$n \lg n$

$n \lg n$   $W(n) = 2W(\frac{n}{2}) + cn$   
↑ constants