Sorted tkup → linear add
log 2

Insertion ← worst case   best case
12                         $\frac{n \cdot (n-1)}{2}$ $\underline{n}$

$n \to time$
1 → 0
2 → 1
3 → 3
4 → 6 $= \frac{4 \cdot 3}{2}$
5 → 10 $= \frac{5 \cdot 4}{2}$
6 → 15 $\frac{6 \cdot 5}{2}$
7 → 21 $\frac{7 \cdot 6}{2}$

$\frac{n^2 + n}{2}$ quadratic

Selection sort

worst case   best case

$\frac{n^2 + n}{2}$ $\frac{n^2 + n}{2}$
5   5
4   4
3   3

Bubble sort

worst   best
$\frac{n^2 + n}{2}$ $n - 1$ → linear
quadratic

n^2 ? n

? $\frac{\log 2}{\text{sort}}$ everything? ✓

for -----
   for -----
      if
         swap