# 1.1

# 1.2

10n log(n) <= n2

10 log(n) <= n

n0 >= 10

# 1.6

*1/n* ***<*** *log(log(n))* ***<*** *√n* ***<*** *4log(n)* ***<*** *5n* ***<*** *n log(n)* ***<*** *2n log2 (n)****<*** *4n3/2* ***<*** *n2 log(n)* ***<*** *n3* ***<*** *2n* ***<*** *4n*

# 1.10

**Algorithm** Loop1(n)

s ← 0 O(1)

for i← 1 to n do O(n)

s← s+ I O(n)

**Total running time** **O(n)**

# 1.14

Algorithm Loop5(n)

s ← 0 O(1)

for i← 1 to n2 do O(n2)

for j← 1 to i do O(n4)

s← s+ I O(n4)

**Total running time O(n4)**

# Prove

logb xa = a logb x

a = logb xa / logb x

a = logx xa = a