

COMP 312
Assignment 1
Due 1:10 pm, Thursday, February 5, 2009
All problems are of equal value.

Reading

Cormen, Leiserson, Rivest and Stein, Chapters 1, 2, & 3.

Practice

CLRS, 1.2-2, 1-1, 2.1-1, 2.1-2, 2.2-1, 2.2-3, 2.2-4, 2.3-4, 2-4, 3.1-1...8, 3.2-1, 3.2-5, 3-1, 3-3, 3-4 (c)-(f), 3-5, A-1

To Be Handed In

1. CLRS, 1.2-3
2. CLRS, 2.1-4. In addition to solving the problem as stated, express the running time (as a function of n) of your algorithm using Θ -notation.
3. Express the running time (as a function of n) of the following pseudo-code algorithms using Θ -notation.

```
r = 0
i = n*n
while i > 1 do
  for j = 1 to i do
    r = r + 1
  i = i/2
```

Please note: $i/2$ is $\lfloor i/2 \rfloor$, the integer part of $i/2$.

4. CLRS, 3-2
5. CLRS, 3-4 (a), (b), (g), (h)