

# Exercise sheet 10

## Question 10.1

insert (8)

insert (2)

insert (1)

R

insert (3)

insert (6)

LR

insert (10)

L

insert (9)

RL

## Question 10.2

Let  $A(h)$  be the minimum number of nodes that an AVL tree of height  $h$  must contain.

$$A(0) = 1 \quad A(1) = 2 \quad \text{and} \quad A(h) = 1 + A(h-1) + A(h-2)$$

$$\Rightarrow A(2) = 4 \quad A(3) = 7 \quad A(4) = 12 \quad A(5) = 20 \quad A(6) = 33$$

$$A(7) = 54 \quad A(8) = 88 \quad A(9) = 143 \quad A(10) = 232$$

$\Rightarrow$  minimum number : 232