Aufgabe 1

```
1  Merge(H1,H2):
2      head = NIL
3      l1 = head(H1)
4      l2 = head(H2)
5      while ( l1 != NIL and l2 != NIL ) do
6          if ( degree(l1) < degree(l2) ) then
7              y = l1
8              h = sibling(l1)
9          else
10             y = l2
11             l2 = sibling(l2)
12         if ( head == NIL ) then
13             head = y
14             x = y
15     if ( l1 != NIL ) then
16         if ( head == NIL ) then
17             head = l1
18         else
19             sibling(x) = h
20     if ( l2 != NIL ) then
21         if ( head != NIL ) then
22             head = l2
23         else
24             sibling(x) = l2
25     return head;
```

Aufgabe 2

```
1  ExtractMinimum(H):
2      x = head(H)
3      prev_x = NIL
4      min = x
5      prev_min = NIL
6      if ( x == NIL ) then
7          return NIL
8      prev_x = x
9      x = sibling(x)
10     while ( x != NIL ) do
11         if ( key(x) < key(min) ) then
12             min = x
13             prev_min = prev_x
14         prev_x = x
15         x = sibling(x)
16     if ( prev_min != NIL ) then
17         sibling(prev_min) = sibling(min)
18     else
19         head = sibling(min)
20     if ( child(min) != NIL ) then
21         H2 = InvertChildren(min)
22         Union(head,H2)
23     sibling(min) = NIL
24     parent(min) = NIL
25     child(min) = NIL
26     return min;
```

Aufgabe 3

```
1  InvertChildren(x):
2      head = NIL
3      current = child(x)
4      next = NIL
5      while ( current != NIL ) do
6          next = sibling(current)
7          if ( child(x) == current ) then
8              sibling(current) = NIL
9              child(x) = NIL
10         parent(current) = NIL
11         sibling(current) = head
12         head = current
13         current = next
14     return head
```