```
> restart;
  u := [3,4]; # x^3 y^4
                              u := [3, 4]                                  (1)
> v := [3,1];
                              v := [3, 1]                                  (2)
> w := [2,2];
                              w := [2, 2]                                  (3)
> less := proc(u,v) evalb(u[1]<v[1] or u[1]=v[1] and u[2]<v[2])
  end;
   less := proc(u, v) evalb(u[1] < v[1] or u[1] = v[1] and u[2] < v[2]) end proc   (4)
> less(u,v);
                                 false                                     (5)
> less(v,u);
                                 true                                      (6)
> less(w,v);
                                 true                                      (7)
```

[i, j, e]

```
> h23 := [2,3,u];
                          h23 := [2, 3, [3, 4]]                            (8)
> h13 := [1,3,v];
                          h13 := [1, 3, [3, 1]]                            (9)
> h22 := [2,2,w];
                          h22 := [2, 2, [2, 2]]                           (10)
> h11 := [2,4,[2,1]];
                          h11 := [2, 4, [2, 1]]                           (11)
> LT := proc(h1,h2) global CNT; CNT++; less(h1[3],h2[3]) end;
      LT := proc(h1, h2) global CNT; `++`(CNT); less(h1[3], h2[3]) end proc   (12)
> CNT := 0;
                               CNT := 0                                   (13)
> LT( h13,h23 );
                                 true                                     (14)
> CNT := 0;
                               CNT := 0                                   (15)
> H := heap[new]( LT );
                      H :=table([0 = 0, `<` = LT])                        (16)
> for h in [h23,h13,h22,h11] do heap[insert](h,H); od;
                             [2, 3, [3, 4]]
                             [1, 3, [3, 1]]
                             [2, 2, [2, 2]]
                             [2, 4, [2, 1]]                               (17)
> CNT;
                                   3                                      (18)
> while not heap[empty](H) do heap[extract](H) od;
                             [2, 3, [3, 4]]
                             [1, 3, [3, 1]]
```

$$[2, 2, [2, 2]]$$

$$[2, 4, [2, 1]] \tag{19}$$

```
> CNT;
```

$$8 \tag{20}$$

$$CNT := 1 \tag{21}$$