Question 1.

a)

	0	**1**	**2**	**3**	**4**	**5**	**6**
0	0	2	1	1	0	0	0
1	0	0	0	3	4	0	0
2	0	0	0	0	0	5	0
3	0	0	2	0	2	2	8
4	0	0	0	0	0	0	5
5	0	0	0	0	0	0	0
6	0	0	0	0	0	1	0

0 represents ***False***, and positive integers represent ***weight***

b)

0 : { 1, 2, 3 }
1 : { 3, 4 }
2 : { 5 }
3 : { 2, 4, 5, 6 }
4 : { 6 }
5 : { }
6 : { 5 }

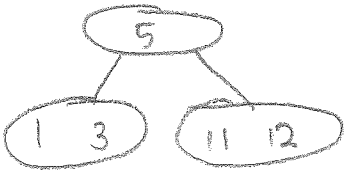
c)

{0=max_value(2147483647)}
{0=max_value(2147483647)}, 1=max_value(2147483647)}
{0=max_value(2147483647), 1=max_value(2147483647),
3=max_value(2147483647)}
{0=max_value(2147483647), 1=max_value(2147483647),
2=max_value(2147483647), 3=max_value(2147483647)}

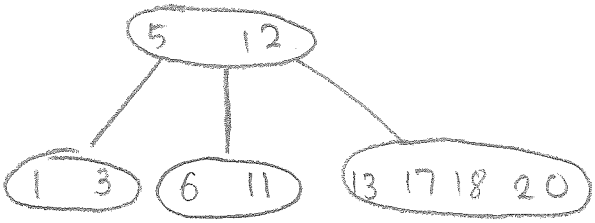
d) The algorithm is supposed to go backward, therefore we need to trace back from 2 to 4. However, 2 has only one out leading to 5, which does not have any outs but only ins. Therefore, the algorithm would not work in this case.

4 a) $b = 4$.

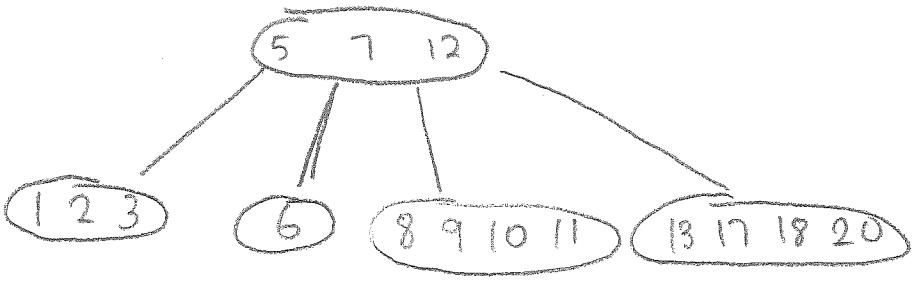
inserting 3



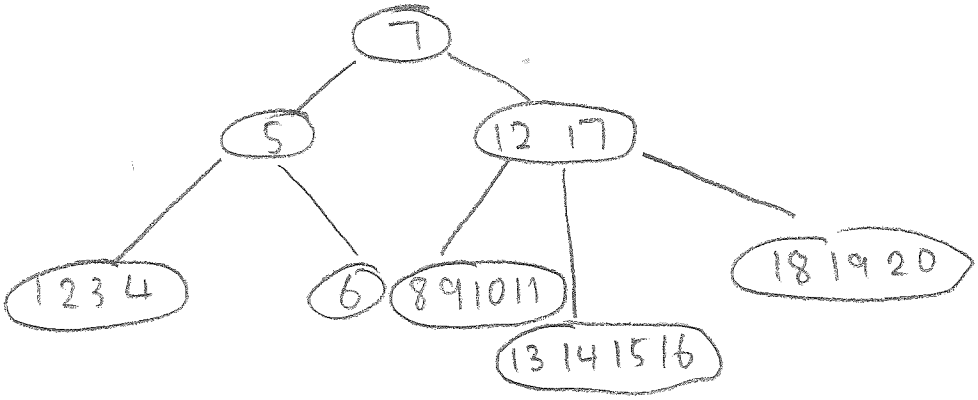
inserting 17



inserting 2

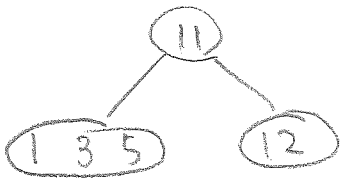


inserting 4

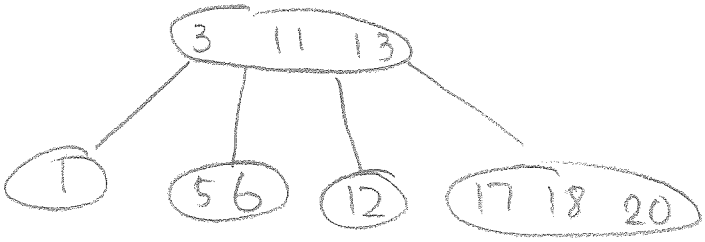


b) $b = 3$

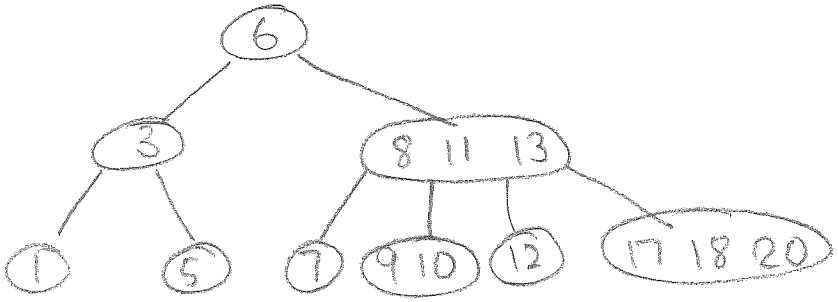
insert 3



insert 17



insert 2



insert 4