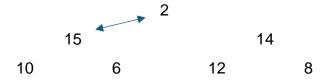
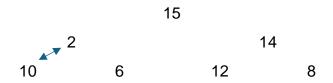
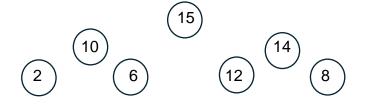
a) Bottom-up

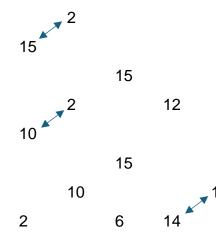


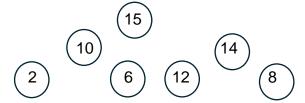






b) Top-down





c) It is not always true that the two algorithms will yield the same heap for the same input

P2.

Bad

Char	Т	С	Α	**
Shift	0	3	6	11

Good

Т	С	С	T	Α	T	Т	С	T	Т	Т
20	19	18	17	16	15	14	13	3	3	3

Т	Т				G							Т	Α	Т	Т	С	Т	Т	Т	Т	Α	Т	Α	G	Α	Т	С	Т	С	С	Т	Α	Т	Т	С	Т	T	Т
Т	С	C	Т	Α	Т					Т																												
			Т	O	C	Т	Α	Т	Т	C																												
									Т	C	\circ	Т	Α	Т	Т	\circ	Т	Т	Т																			
																			T	\circ	С	Т		Τ					Т									
																						H	C	С	Т	Α	Т											
																												Т	C	C	Т	Α	T	T	C	Τ	Т	Т

P3.

K	63	42	45	64	53	41
K mod 11	8	0	1	9	9	8

a.

0	1	2	3	4	5	6	7	8	9	10
	45							63	42	
								41	64	
									53	

Largest number of key comparisons: 3

b.

0	1	2	3	4	5	6	7	8	9	10
53	45	41						63	42	64

Largest number of key comparisons: 6