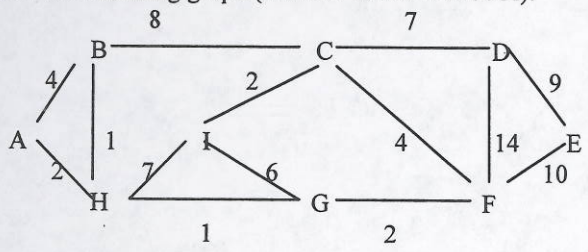
Key

e) Consider the following graph (the root vertex will be A):



Prim's algorithm first initializes the key and parent arrays in such a way that the root vertex has key 0 and a nil parent and all of the other vertices have an infinite key (?). It then continues to make selections and make updates to the key and parent arrays. Show the values that Prim's algorithm would compute for the first, second and third pair of arrays below. You may stop after the third pair of arrays is complete. (5 points)

	A	B	C	D	E	F	G	H	I
0	?	4	?	?	?	?	?	2	?
Nil		A						A	

	A	B	C	D	E	F	G	H	I
0	?	1	?	?	?	?	1	2	7
Nil		H					H	A	H

	A	B	C	D	E	F	G	H	I
0	?	1	?	?	?	2	1	2	6
Nil		H				G	H	A	G

six