**P-9.3:** What does each remove min call return within the following sequence of priority queue ADT methods: add(5,A), add(4,B), add(7,F), add(1,D), remove min( ), add(3,J), add(6,L), remove min(), remove min(), add(8,G), remove min(), add(2,H), remove min(), remove min()

**Answer:** Let's understand what remove\_min() do: It will remove and returns an entry (k,v) having minimum key from the priority queue; returns null if the priority queue is empty.

add(5,A)  
add(4,B)  
add(7,F)  
add(1,D)  
remove\_min( ) Here will remove the least priority element and D with priority 1 and returns (1,D)  
add(3,J)  
add(6,L)  
remove\_min() Here will remove the least priority element and J with priority 3 and returns (3,J)  
remove\_min() Here will remove the least priority element and B with priority 4 and returns (4,B)  
add(8,G)  
remove\_min() Here will remove the least priority element and A with priority 5 and returns (5,A)  
add(2,H)  
remove\_min() Here will remove the least priority element and H with priority 2 and returns (2,H)  
remove\_min() Here will remove the least priority element and L with priority 6 and returns (6,L)

So overall the return values of the each remove\_min call functions as per the priorities are:  
**(1,D), (3, J), (4,B), (5,A), (2,H), (6,L)**