I looked at the Google Doc and tried to figure it out, but can someone provide an explanation for the answer on this one?

Thanks!

So in an implementation with a binomial heap (which is what I'm assuming is used here), Prims makes V extract-min operations, which each take log V time. Then for each vertex it extracts, a call to decrease-key (also takes log V time) could be made for each of its edges. Hence decrease-key is called O(E) times altogether.

we could not make such a substitution)

(V)