This is due at 9:59 AM on the morning of Monday, May 10. You will need to submit to GradeScope. For grade purposes, this is worth half of one reinforcement exercise set. The purpose of this is to help prepare you for lecture on that day. This should not take you more than a dozen minutes to complete. This one in particular should take you maybe five minutes once you understand the problem. If you do not understand the problem, please ask on Piazza.

Consider the following binary search tree:
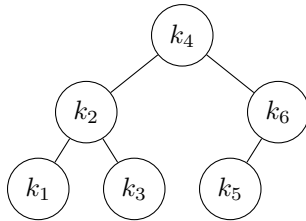
I am going to search for an element in this tree. The probability I search for any given key is as follows:

Key	Probability
k_1	16.5%
k_2	27.3%
k_3	7.3%
k_4	19%
k_5	4.8%
k_6	25.1%

The formula for the expected cost of lookup is $\sum_i d_i p_i$ where d_i is the depth of the node, starting with the root at depth one, its children at depth two, and so on, and p_i is the probability I search for node i.

Compute the expected cost of the search I am about to do. Show your work, although you may use a calculator for multiplying and adding.

The correct answer is 2.096, by the way.