Consider a linear triatomic molecule such as CO_2. We can create a crude model of it using the nearest neighbour approximation (just like we did in lecture 26 with a chain of 1D square wells). Note that the well in the middle (e.g. its depth and width) is different from those on the sides, because the potential due to the C atom is not the same as that due to O atoms. Determine the single-particle energy levels of CO_2 in this model. Feel free to introduce any notations you find necessary.