Physics Problem-Newton's Cradle

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Lagrange recently got a Newton's Cradle as a birthday present, consisting of 5 metal spheres of radius $R = 3\ cm$ and mass $M = 100\ g$ hung with massless strings of effective length $L = 10\ cm$ hung side by side, so that adjacent spheres are tangent to each other. Lagrange happens to know some interesting facts about the properties of the metal sphere - each time any collision occurs between two metal spheres, exactly $k = 15\%$ of the total energy involved in the collision is converted to internal energy in the colliding spheres. Also, in order to displace any of the metal spheres, it must be provided with an energy greater than the threshold energy $E_T = 1$ mJ.

Lagrange displaces the leftmost metal sphere by an angle $\theta = 30^\circ$ from the vertical, and lets go. Calculate the amount of time in seconds, to the nearest 3 significant figures, that it takes for the cradle to come to a stop. Take $g = 9.81\ m/s^2$ and assume that the speed of mechanical waves in the metal spheres is $v_s = 400\ m/s$. Ignore air resistance.

Answer: 0.953 seconds