308 Q8

TONY DENG

Quiz. *In this problem, you explored to two extremes of motion. When r =const the masses circle each other since the spring force and the centripetal force are equal. When ϕ =const then the system does not rotate and the masses on the spring oscillate by simple harmonic motion. For each of these cases, describe what the motion looks like when you include the motion of the center of mass.*
Since the center of mass is the ignorable coordinates here, including the motion of the center of mass won't make much difference from what we have so far since there is no net external force on the system.

Therefore, when r is constant, the masses circle each other with respect to the center of mass. When ϕ is constant, the masses oscillate by simple harmonic motion while the center of mass never changes position.

Q.E.D.

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