

Latex Template

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Question 1 Consider a puck sliding across a frictionless merry-go-round at speed v on a trajectory which passes through the center. The merry-go-round rotates at angular velocity w and has radius R .

- (a) Write down the r, ϕ coordinates of the puck as functions of time, as observed by an observer standing next to the merry-go-round. Take $t = 0$ to be the time when the puck is at the edge of the merry-go-round, the spatial origin to be at the center of the merry-go-round, and $\phi = 0$ to be the initial angular location of the puck. Is the observer in an inertial frame?
- (b) Write down the r', ϕ' coordinates of the puck as functions of time, as observed by an observer sitting on the edge of the merry-go-round. Take $t = 0$ to be the time when the puck is at the edge of the merry-go-round, the spatial origin to be at the center of the merry-go-round, and $\phi' = 0$ to be the initial angular location of the puck. Is the observer in an inertial frame?

Pf:

Fxxk you.

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Question 2

Pf:

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Question 3

Pf:

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Question 4

Pf: