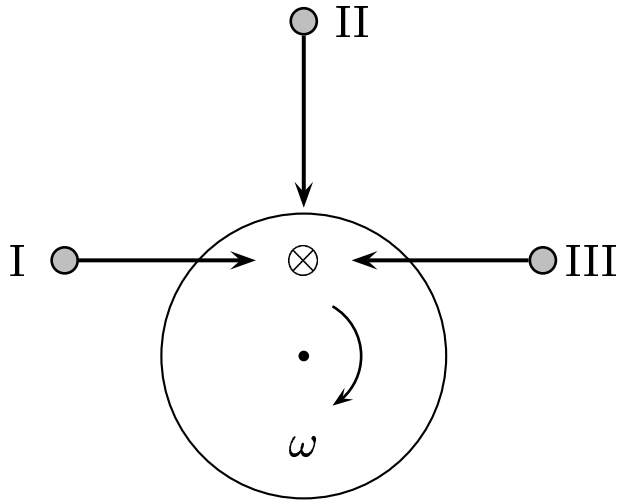

The sketch shows the top view of a merry-go-around. It is rotating clockwise. A boy is jumping on to the merry-go-around in 3 different ways:
I) from the left side,
II) from the top side, and
III) from the right side.

For all these cases, the boy lands on the same spot.

Compare final angular momenta and moment of inertia of final merry-go-round system for these cases.

A) $final : L_I > L_{II} > L_{III}$ and $final : I_I = I_{II} = I_{III}$.

B) $final : L_I > L_{II} > L_{III}$ and $final : I_I > I_{II} > I_{III}$.

C) $final : L_I = L_{II} = L_{III}$ and $final : I_I = I_{II} = I_{III}$.

D) $final : L_I = L_{II} = L_{III}$ and $final : I_I > I_{II} > I_{III}$.

With respect to the center of the merry-go-around, the angular momentum of the boy is

I)clockwise,

II)0,

and III)counterclockwise.

The angular momentum of the merry-go-around is along the clockwise direction.

By adding the two angular momenta in each case leads to $L_I > L_{II} > L_{III}$.

Since for all three cases, the boy's mass is added to the system at the same location, this implies that $I_I = I_{II} = I_{III}$.

Answer **A**.

11.05-03˙Merry˙Go˙around˙and˙a˙Boy 2004-3-24