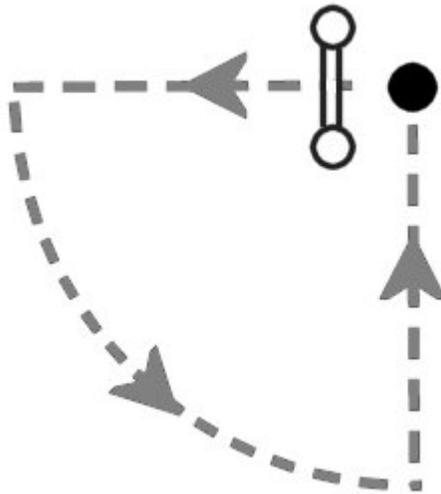


Question #308

I sit on a rotating chair resting on a high-quality, very low-friction bearing, so that when the chair rotates it creates very little torque (let's say negligible for this experiment).



Holding a heavy dumbbell in my right hand in front of my chest, I sit firmly on the rotating chair, as seen in the photograph above. Rapidly in succession I repeatedly extend my right arm to the right, rotate it 90° counterclockwise as viewed from above, to directly in front of me, and return it to its original position at my chest. This motion is shown in detail in the figure at the right above.

After doing this ten times I stop. What will be my situation at that time?

- (a) I will be sitting motionless in the same position, but totally exhausted.
- (b) I will have rotated clockwise as viewed from above and will be at rest.
- (c) I will have rotated clockwise as viewed from above and will continue rotating.
- (d) I will have rotated counterclockwise as viewed from above, and will be at rest.
- (e) I will have rotated counterclockwise as viewed from above, and will continue rotating.

- (f) I will have rotated about one complete turn and will be moving clockwise.
- (g) I will have rotated about one complete turn and will be moving counterclockwise.

Click here for [Answer #Q308](#) after March 3, 2008.

[Question of the Week](#)

[Outreach Index Page](#)

[Lecture-Demonstration Home Page](#)



For questions and comments regarding the *Question of the Week* contact [Dr. Richard E. Berg](#) by e-mail or using phone number or regular mail address given on the [Lecture-Demonstration Home Page](#).