

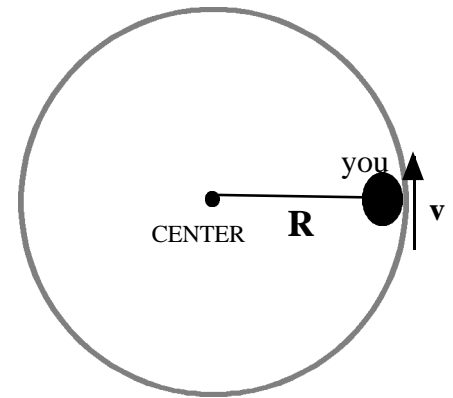
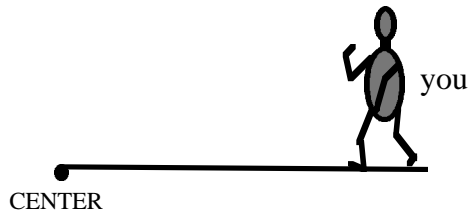
NAME \_\_\_\_\_

## PHYSICS HOMEWORK QUIZ #9D

PERIOD \_\_\_\_\_  
CENTRIPETAL FORCE

You are standing on a MERRY-GO-ROUND at a distance of  $R = 9.5$  meters from the center. Your mass is  $46.0$  kg and you go around the center of the ride once every  $8.5$  seconds.

1. Complete the **freebody diagram** below indicating each of the forces acting on you while standing at the location shown in the diagram to the right ? [3 pts]



2. What will be your **speed** as you moves around the center ? [3 pts]
3. What will be the **magnitude** of the **frictional force** acting on you? [3 pts]
4. What will be the **minimum coefficient of friction** between your feet and the Merry-go-Round if you are to not slip off the deck of the ride ? [3 pts]
5. What will be the **magnitude** and **direction** of your **centripetal acceleration** when you are in the position shown in the diagram above ? [3 pts]