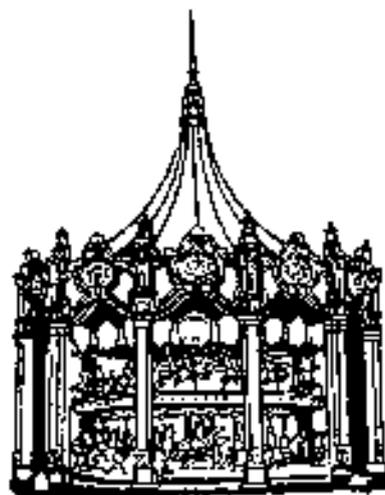


COLUMBIA CAROUSEL



1. Describe the motion of a passenger on a carousel horse. A sketch may be used.
2. Is a person on a moving carousel horse moving with a constant speed? Explain your answer.
3. Which passengers seem to be moving faster; those on outer horses or those on inner horses?
4. Determine the circumference of the outer ring of horses. This may be done by measuring the distance between the support poles of two adjacent horses and multiplying this distance by the total number of spaces between horses.
5. Determine the circumference of the inner ring of horses. This may be done by measuring the distance between the support poles of two adjacent horses and multiplying this distance by the total number of spaces between horses.
6. Calculate the linear speed of a passenger on an outer horse by dividing the circumference of the ring by the period of rotation.
7. Repeat question 4 through 6 for the inner ring of horses.
8. Compare your answers to question 6 and 7. Did you answer question 3 correctly?
9. Using the value you obtained for the circumference of the outer ring of horses in #4, calculate the radius of the outer ring.
10. Determine the centripetal acceleration of a passenger on an outer horse using the values you have obtained for the speed and radius.
11. Use your accelerometer to measure the centripetal acceleration while riding a horse on the outer ring. How does this value compare to the computed value obtained in #10?