

CHUBASCO

1. Can you keep your cup from spinning as the ride turns?
If so, how?
2. What happens as you spin the barrel faster?
3. Does the motion of the ride from inside the barrel look the same as it does watching it from the side?
4. To spin faster you should spin your cup (clockwise) (counterclockwise).
5. Draw a top view of the patch of a non-spinning cup.
6. Do you feel more force on your body if you turn the cup clockwise, counter-clockwise, and let it freewheel? Do accelerometer readings correspond to what you feel?
7. If you don't turn the wheel, does the distribution of bodies (mass) in your cup make any difference in your accelerometer readings? Yes or No. If yes, what is the difference?
8. What would be the effect if the cups did not sit on the small platform?
9. What is the number of people who can ride Chubasco at one time, or during one cycle?
10. The maximum number of people who can ride Chubasco in one hour is 650. How many complete rides, or cycles, does Chubasco make per hour?
11. How much time does it take to complete one full cycle?
12. The actual ride lasts 2 minutes, 30 seconds. The rest of the time is used for loading and unloading passengers. How much time does it take to load and unload passengers each cycle?
13. The large platform travels at a rate of 4 revolutions per minute. So the smaller platforms complete four large circles every minute. Calculate the distance the smaller platforms travel each minute.

(Hint: Find the circumference of the path the small platforms travel. The circumference is equal to the distance one platform travels each revolution. So to find the distance traveled during one minute, or 4 revolutions, multiply the circumference by 4.)

14. Each of the small platforms travels at a rate of 4 revolutions per minute. Calculate the distance each barrel travels in one minute.
15. Before the ride begins to move, see how fast you can spin the cup. Let one or two people spin the cup as fast as they can. Assign one person as timekeeper. The timekeeper will wait until the spinners get the cup moving at a good speed and begin timing for one minute. Choosing one large item that can be seen in the distance as a reference point can do this. Then count the number of times you see the reference point. This is the number of revolutions made.
16. Each cup has a diameter of 7 ft. Using the speed you just determined, calculate the distance you traveled in one minute.