## CIRCULAR MOTION PROBLEMS

Name

1. A sock stuck to the inside of the clothes dryer spins around the drum every 2.0 s at a distance of . 50 m from the center of the drum. A) What is the socks linear speed? B) If the drum were twice as large, what would the linear speed then be? (DO NOT do any calculations for Part B!)
2. A .50 kg rock is tied on a 1.0 m string which has a breaking force of 990 N . If the string breaks, what is the speed of the rock?
3. Roxanne is making a strawberry milkshake in her blender. A tiny .0050 kg piece of berry is rapidly spun around the inside of the container with a speed of $14 \mathrm{~m} / \mathrm{s}$, held by a centripetal force of $10 . \mathrm{N}$. What is the radius of the blender?
4. A cement mixer of diameter 5.00 m turns with a frequency of .0200 Hz . What is the centripetal acceleration acting on an ant on the inside wall?
5. A boy swings a 0.35 kg rock on a 1.25 m string above his head. The rock goes through 1 complete revolution in 0.665 s . What is the tension in the string?
6. What is the minimum radius at which an airplane flying at $3.00 \times 10^{2} \mathrm{~m} / \mathrm{s}$ can make a U-turn if its centripetal acceleration is not to exceed 4.0 g 's?
