

## Centripetal Force Problems

Name:

- 1.) A 50 kg passenger on an amusement park ride stands with his back against a wall of a cylindrical room with radius 3 meters. What is the centripetal force of the wall pressing into the back of the person if the person moves at 6 m/s?
- 2.) A pilot is flying a small plane at 30 m/s in a circular path with a radius of 100 m. If a force of 635 N is needed to maintain the pilot's circular motion, what is the pilot's mass?
- 3.) An energetic father places his 20 kg child on a 5.0 kg cart to which is attached a 2.0 meter long rope. He then holds the other end of the rope and spins the cart and child around in a circle, keeping the cord parallel to the ground. If tension in the rope is 100 N, what is the tangential speed of the cart?