1. You are a passenger in a racecar approaching a turn after a straight-away. As the car turns left on the circular arc at constant speed, you are pressed against the car door. Which of the following is true during the turn (assume the car doesn't slip on the roadway)?

1. A centripetal force pushes you against the door.
2. There is no force that pushes you against the door.
3. The frictional force of the ground pushes you against the door.
4. There is no centripetal force acting on you.
5. You cannot analyze this situation in terms of the forces on you since you are accelerating.
6. Two of the above.
7. None of the above.

2. Which of the following types of forces can produce a centripetal acceleration ?

1. Normal force
2. Frictional force
3. Tension force
4. Gravitational force
5. All of the above

3. The ""barrel of fun"" must spin at a certain minimum angular speed in order for a rider of mass m_1 to stick to the wall. Does this minimum angular speed change for a rider of mass $m_2 > m_1$?
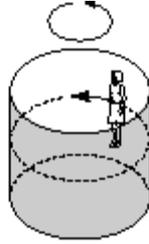
1.yes
2.no
3.Not enough information to determine.

4. A ball is suspended from a vertical rod by two strings of equal strength and equal length. The strings are very light and do not stretch. The rod is spun with a constant angular acceleration. Which string breaks first?
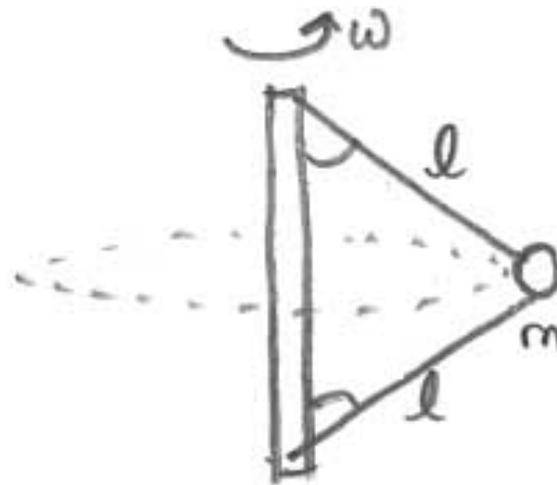
1.the upper string
2.the lower string
3.they break simultaneously
4.cannot tell without more information

5. A stone attached to a string is whirled in a vertical plane. Let T_1, T_2, T_3, and T_4 be the tensions at locations 1, 2, 3, and 4 required for the stone to have a given speed v_0 at these four locations.
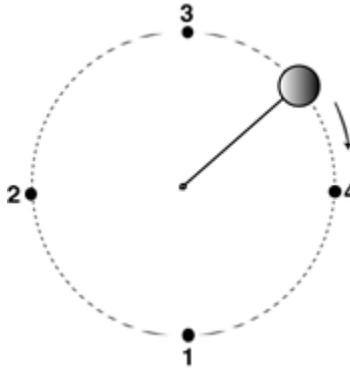
1. $T_3 > T_2 > T_1 = T_4$
2. $T_1 = T_2 = T_3 = T_4$
3. $T_1 > T_2 = T_4 > T_3$
4. none of the above

6. A puck of inertia M is moving in a circle at uniform speed on a frictionless table as shown above. It is held by a string which holds a suspended bob, also of inertia M, at rest below the table. Half of the length of the string is above the tabletop and half below. What is the centripetal acceleration of the moving puck?
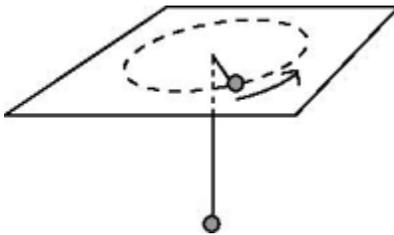
1.less than g
2.g
3.greater than g
4.zero
5.insufficient information