INSTITUTO DE FÍSICA
UNIVERSIDADE FEDERAL DO RIO DE JANEIRO
Pós-Graduação

Mestrado Profissional em Ensino de Física

PROCESSO SELETIVO – TURMA DE 2009

FASE 1 – PROVA DE INGLÊS

O texto a seguir é um trecho do artigo *Aerodynamics of a Party Balloon*, de Rod Cross, publicado na revista The Physics Teacher, vol. 45, de setembro de 2007 (pág. 334). Você deve apresentar uma versão em português deste texto. É permitida a consulta a dicionários.

It is well-known that a party balloon can be made to fly erratically across a room, but it can also be used for quantitative measurements of other aspects of aerodynamics. Since a balloon is light and has a large surface area, even relatively weak aerodynamic forces can be readily demonstrated or measured in the classroom. Accurate measurements can be made of drag and buyoant forces, and reasonable estimates can also be made of the Magnus force on a spinning balloon.

The Magnus force acts in a direction perpendicular to both the direction of motion and the spin axis and plays a dominant role in many ball sports. For example, when a golf ball is launched with backspin, the Magnus force acts vertically upward on the ball and allows it to travel an even greater distance than it would in vacuum, at least at the low launch angles used by golfers when driving the ball. In tennis, topspin allows a player to hit the ball almost as hard as he or she likes and still get the ball to land in the opposite court. In that case, the Magnus force acts downward. When a ball is thrown horizontally and spins about a vertical axis, the Magnus force causes the ball to swerve in a horizontal direction at right angles to the path of the ball. In baseball, a pitcher needs to have a good working knowledge of how the Magnus force can be used to confuse the batter.

INSTITUTO DE FÍSICA
UNIVERSIDADE FEDERAL DO RIO DE JANEIRO
Pós-Graduação

Mestrado Profissional em Ensino de Física

PROCESSO SELETIVO – 2008 - FASE 1 – PROVA DE INGLÊS

Nome: _____

INSTITUTO DE FÍSICA
UNIVERSIDADE FEDERAL DO RIO DE JANEIRO
Pós-Graduação

Mestrado Profissional em Ensino de Física

PROCESSO SELETIVO – 2008 - FASE 1 – PROVA DE INGLÊS

Nome: _____