1 Central Force Definition

(Quick) Purpose: Recognize the definition of a central force. Build experience about which common physical situations represent central forces and which don't.

Which of the following forces can be central forces? which cannot? If the force CAN be a central force, explain the circumstances that would allow it to be a central force.

(a) The force on a test mass m in a gravitational field $\vec{g}$, i.e. $m\vec{g}$

(b) The force on a test charge q in an electric field $\vec{E}$, i.e. $q\vec{E}$

(c) The force on a test charge q moving at velocity $\vec{v}$ in a magnetic field $\vec{B}$, i.e. $q\vec{v} \times \vec{B}$