Quiz 5

October 27, 2002

11. A projectile is thrown straight up into the air. At its **highest point**, 200 m above the ground, what is the magnitude of the **force** acting on the mass? (Gravity is always acting on the projectile).

a) mg b) 2 mgh c) zero d) $\frac{1}{2}mg^2$ e) kx

12. A mass is dropped without air friction from a tall building. After the mass falls 10m (displacement= –10m) what is the **acceleration vector** of the mass? (Gravity produces acceleration vector, g downward, on any mass.)

a) $-0.1 m/s^2$ b) $-1 m/s^2$ c) $-10 m/s^2$ d) $-100 m/s^2$ e) $-1000 m/s^2$

13. An elevator is moving **upward** at a **constant speed**, 3 m/s. Describe the net force vector, $\mathbf{F}_{net}$, acting on the passengers. (Constant speed and direction implies balanced forces!)

a) $\mathbf{F}_{net}$ points upward
b) $\mathbf{F}_{net}$ points downward
c) $\mathbf{F}_{net} = 10$ N
d) $\mathbf{F}_{net} = -10$ N
e) $\mathbf{F}_{net}$ is zero

14. A bowling ball **cannot have** what physical property?

a) a speed
b) a velocity
c) a mass
d) a force (forces ACT ON objects; objects do not have force)
e) a displacement