Muzzle Velocity for an Object Shot Straight Upwards

Note that as the ball is shot out of the cannon vertically upwards, it has a certain initial (muzzle) velocity, which causes it to have a certain kinetic energy. The ball decelerates uniformly, until at the apex of its flight, all of its kinetic energy is converted to potential energy. Using this principle (Conservation of Energy), the muzzle speed of the ball may be calculated to be:

a.) $\sqrt{gh}$ b.) $\sqrt{2gh}$ c.) mgh d.) $\left(\dfrac{mgh}{2}\right)$ e.) $\sqrt{\dfrac{gh}{2}}$