A bad guy is holding a present for his mother in law as he steps onto a tall elevator on the ground floor of a building. The bad guy holds the present at a height of 1 meter above the elevator floor. The elevator begins accelerating upward from rest at 3 m/s2.

**After the elevator accelerates for 5 seconds**… He drops the present, the present hits the floor.

Draw a cartoon strip of this.

(12 points) A bad guy is holding a present for his mother in law as he steps onto a tall elevator on the ground floor of a building. The bad guy holds the present at a height of 1 meter above the elevator floor. The elevator begins accelerating upward from rest at 3 m/s2.

**After the elevator accelerates for 5 seconds**…

**Calculate:**

1. the velocity of the elevator
2. the height of the elevator above the ground At the end of 5 s

**Describe qualitatively without using equations:**

1. Then the bad guy lets go of the present from a height of 1 meter above the floor of the elevator. If the elevator continues to accelerate upward at 3 m/s2, **describe qualitatively without using equations** the motion of the ball.
2. relative to the student’s hand
3. Relative to the ground
4. Determine the time after the present is released that it will make contact with the floor.
5. What is the height above the ground **of the ball and floor** when they first make contact?