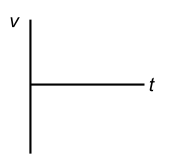
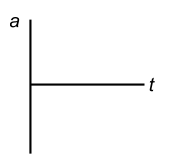
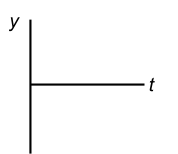
AP Physics 1

Freefall Sample Problems

1. A brick is dropped from the roof of a building under construction. The brick strikes the ground after 4.85 seconds.
   1. What is the brick’s velocity just before it reaches the ground?
   2. How tall was the building?
2. A flowerpot falls past a window and hits the ground 130 meters below the window. It took 3.5 seconds for the pot to fall the 130 m to the ground.
   1. How fast was the flowerpot going when it passed the window?
   2. Assuming the flowerpot’s initial velocity (v0) was zero, from what height was the flowerpot originally dropped?
3. A gazelle is playing catch by himself by kicking a ball straight up.
   1. With what velocity does he kick the ball if it comes back to his foot 2.5 seconds later?
   2. How high does the ball go?
   3. Create position vs. time, velocity vs. time, and acceleration vs. time graphs for the ball. Treat the initial position as zero and up as the positive direction. Label any known values.



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