AP Physics – Free Fall

emaN _____Per___



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So many centuries after the Creation, it is unlikely that anyone could find hitherto unknown lands of any value. -- Spanish Royal Commission, rejecting Christopher Columbus' exploration proposal

1. A can of tuna is dropped from a building. If the can takes 3.2 seconds to strike the ground, what distance did it fall?

2. An engine falls off of a 737 from a height of 2500 m. Ignoring wind resistance, how fast is the thing traveling when it smacks into the turf?

3. A ball is thrown straight down from a bridge with an initial velocity of 18.5 m/s. If it travels for 2.3 sec, how high is the bridge?

4. A ball, initially at rest, rolls down a ramp. It experiences an acceleration of 1.2 m/s^2 If it is rolls a distance of 1.8 m, how fast is it traveling?

5. A ball rolls down a ramp with very little friction. Which of the following is not true?

(A) The ball covers a greater distance with each time increment.
(B) The ball's acceleration increases with each time increment.
(C) The ball's velocity increases with each time increment.
(D) The ball cover's an equal distance in an equal amount of time.
(E) The distance that the ball covers in one second depends on the time and the ball's initial velocity.

6. A ball is thrown straight up, it rises 12.5 m before it falls back down. (a) What was its initial speed? (b) how much time is it in the air?

7. A ball is thrown straight down from a bridge with an initial velocity of 18.5 m/s. The bridge is 22.0 m above the river. How much time to hit the water?