

Name _____ Period _____ Date _____

Physics Test on Velocity and Acceleration in One Dimension

Directions : Show all work! You must include the formula that you used. Include units, circle your answer. Assume uniform acceleration where appropriate. Ignore air resistance.

1. Hugh Morris, a comedian, drops a solid rubber chicken from an airplane to his unsuspecting fans.
 - a. (3 Pts) If the chicken takes 8 seconds to hit the ground, how high is the plane?

 - b. (3 Pts) What would be the final velocity of the chicken right before it hits the ground?

2. (3 Pts) Iona Ford accelerates her car from 20 m/s to 35 m/s in a distance of 25 m. What is her acceleration?

3. (3 Pts) Oliver d'Rode rides his moped 2 km at 20 km/hr and then at 40 km/hr for 18 minutes. What is his average speed for the whole trip?

4. (3 Pts) Anita Knapp is driving her motor home at 54 m/s and then brings it to a stop with an acceleration of -8m/s^2 . How many meters does it take her to stop?

5. Barbara Seville, the famous opera star, buys a seat on the first flight of the SpacePlane. During one part of the trip, the rocket is traveling at 500 m/s and it then undergoes an acceleration of -40 m/s^2

a. (3 Pts) What is the rocket's velocity after 10 seconds?

b. (3 Pts) What is the rocket's velocity after 20 seconds?

6. (4 Pts) Noah Lott shoots a spit wad through a 10 inch straw. The spit wad leaves the straw at 32 ft/sec. What is the acceleration of the spit wad while in the straw? (Hint: two part problem)

7. (3 Pts) Mike Easter accelerates from rest and drives 237 m in 8 seconds. What is his acceleration during that time?

8. (4 Pts) Adam Zapel drops an orange off of a bridge in Florida that has the same elevation as their highest peak - 102 m. Bob is in a boat below and happens to look up and sees the orange still 70 meters away. How long does Bob have to dodge the orange?

Conversion problem (2 pts XC) Work on the back - **answers on this side.**

A student in the back of his grandfather's farm truck (which is going 40 mi/hr) decides to shoot eggs out the back of the truck with an egg shooter that he made in physics class.

a.) If it takes 13.2 seconds for him to reload and shoot, what would his egg usage rate be in cartons/Km? (assume a normal carton of 12 eggs)

b.) How many whole eggs would he have loaded into his gun if the truck traveled 18 miles?