Honors Physics Kinematics – Acceleration Mr. McMullen

Name _____ Date _____ Period _____

Acceleration Practice Problem Set 3

Answer the following questions on a separate sheet of paper. Remember the steps in solving physics problems.

1. A skier starts from rest and slides 9.00 m down a slope in 3.00 seconds. In what time will the skier acquire a velocity of 24.0 m/s?
2. A bus moving at a speed of 20.0 m/s begins to slow at a rate of 3.00 m/s each second. Find how far it goes before stopping.
3. A car moving at 30.0 m/s slows uniformly to a speed of 10.0 m/s in a time of 5.00 seconds. Determine:
   a. The acceleration of the car.
   b. The distance it moves in the third second.
4. The velocity of a train moving west is reduced uniformly from 15.0 m/s to 7.00 m/s while traveling a distance of 90.0 m.
   a. Compute the acceleration.
   b. How far will the train travel before coming to rest?
5. A horse with an initial velocity of 8.00 m/s moves along a shoreline with a constant acceleration and travels 640. m in 40.0 s. After 40 seconds find:
   a. The average velocity.
   b. The final velocity.
   c. The acceleration.
6. A truck starts from rest and moves with an acceleration of 5.00 m/s^2. Find its velocity and distance traveled after 4.00 seconds has elapsed.
7. A box slides down an incline plane and attains a speed of 2.70 m/s in three seconds. Find the acceleration and the distance the box moved in the first six seconds.
8. A car passes two check points 30.0 m apart. It takes 4.00 seconds to pass between the checkpoints. The velocity at the first checkpoint is 5.00 m/s. Find both the acceleration and velocity at the second checkpoint.
9. An auto's velocity increases from 6.00 m/s to 20.0 m/s while covering a distance of 70 m. Find the acceleration and the time taken to cover the distance.
10. A plane starts from rest and moves 600. M in 12.0 s along the ground. Find:
    a. The planes acceleration
    b. The velocity at the end of 12.0 seconds
    c. The distance moved during the 12^{th} second.
11. A train running at 30.0 m/s is slowed to a stop in 44 seconds. Find the train's…
    a. acceleration
    b. stopping distance.
12. An object moving at 13.0 m/s slows uniformly at a rate of 2.00 m/s each second for a time of 6.00 seconds. Determine:
    a. The final velocity.
    b. The average velocity during the six seconds.
    c. The distance moved after six seconds.