

Mr. Bosworth
General Physics
Accelerated Motion

Name _____
Period _____

1. What acceleration causes a car's velocity to change from 32 m/s to 96 m/s in 8.0 s?

Answer _____

2. A rocket powered sled can be accelerated from rest to 444 m/s in 1.80 s. How fast is the acceleration?

Answer _____

3. A car with a velocity of 22 m/s is accelerated at a rate of 1.6 m/s^2 for 6.8 s. What is the final velocity?

Answer _____

4. What is the final velocity of a proton that starts at $2.35 \times 10^5 \text{ m/s}$, and is accelerated at the rate of $-1.10 \times 10^{12} \text{ m/s}^2$ for $1.50 \times 10^{-7} \text{ s}$?

Answer _____

5. How far does a plane fly in 15.0 s if its velocity changes from 145 m/s to 75.0 m/s?

Answer _____

6. An astronaut drops a feather from 1.20 m above the surface of the moon. If the acceleration acting on the feather is 1.62 m/s^2 , how long does it take the feather to reach the ground?

Answer_____

7. Engineers are developing new types of guns that might someday be used to launch satellites as if they were bullets. One such gun can give a small object a velocity of 3.5 km/s moving it through only 2.0 cm. What is the acceleration in m/s^2 ?

Answer_____

8. A car moving with constant acceleration covers the distance between two points 60.0 m apart in 6.00 s. Its velocity as it passes the second point is 15.0 m/s. What was its speed at the first point?

Answer_____

9. How far does a plane travel if it is going 500. m/s and has a constant acceleration of -25.0 m/s^2 until it reaches a speed of 300. m/s?

Answer_____

10. A car traveling 70.0 m/s stops in a distance of 50.0 m. What is its acceleration?

Answer_____