

AP Physics 1: Kinematics

Name: _____

1. A car with a velocity of -10 m/s is accelerated at a rate of $+0.5 \text{ m/s}^2$ for 10 s . What is the final velocity of the car?
2. What is the final velocity of a person that starts at 10 m/s and is accelerated at the rate of -0.5 m/s^2 for a period of 10 s ?
3. How far does a plane fly in 10 s if its velocity changes from -10 m/s to $+10 \text{ m/s}$ at a constant acceleration of 2 m/s^2 ?
4. An astronaut on the moon drops a feather from a height of 1 m above the surface. If the acceleration due to gravity on the moon is 1.6 m/s^2 , how long does it take the feather to reach the surface of the moon?
5. 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 10 m/s through a distance of only 1 m . What is the acceleration of this gun in m/s^2 ?
6. A car traveling at 10 m/s stops in a distance of 10 m . What is its acceleration?