

## Accelerated Motion Problem Set 4

Name \_\_\_\_\_

1. The spacecraft WP Wagner is travelling at  $3.55 \times 10^3$  m/s when it begins to accelerate at  $1.50 \times 10^2$  m/s<sup>2</sup> for 10.5 s. Find the spacecraft's new velocity.
2. Wile E. Coyote is in a hot air balloon at rest over the desert when the balloon bursts. Wile hits the ground with a speed of 34.4 m/s. How much time did it take for him to hit the ground?
3. Wile E. Coyote is chasing the roadrunner (again) and runs into the side of a mountain (again) with an initial speed of 24.0 m/s. Wile comes to a stop 1.12 m inside the mountain. Determine Wile's acceleration.



4. A race car is moving at 22.0 m/s when it begins to accelerate. After 3.00 s, the car has moved 130 m. Determine the final speed of the car.

7. A used car salesman claims a certain car can accelerate from rest to 100 km/h in 8.00 s. If so, what is the acceleration of the car in  $\text{m/s}^2$ ?

8. The speed of light is  $3.00 \times 10^8$  m/s. Earth is  $1.497 \times 10^{11}$  m from the sun. Approximately how much time does it take light to travel from the Sun to Earth?