Name: Period:

All Equations of Motion 2

*List the variables you know and the one you're looking for. Choose one single equation to solve the problem, substitute the numbers in and then solve showing all work*.

1. A motorcycle moving at 25.0 m/sec is brought to rest by applying the brake. If it took 200 m for the motorcycle to stop, what was its' acceleration?

2. A car starting from rest accelerates at the rate of 5 m/sec2 until it attains a speed of 30 m/sec. Over what distance was this acceleration accomplished?

3. A sailboat, starting from rest, increased its speed at a uniform rate to 25 m/sec in 10 sec. What was its' acceleration?

4. A hammer is thrown downward off a cliff at a speed of 15 m/sec. A freely falling object has an acceleration of 9.8 m/s2. After 2 seconds how far has it fallen?

5. At the bottom of a hill a car is traveling at 30 m/s. The car slows down uniformly with an acceleration of -5 m/s2 as it goes up the hill. At the top of the hill the car is traveling at 15 m/s. What is the average speed of the car while on the hill?

6. How long will it take for a bird to fly 120 m if the bird starts at rest and can accelerate at 1.5 m/s2?

7. At what speed must you run to travel a distance of 580 m in 120 sec?

8. A spaceship traveling through space turns on its rocket and accelerates at 90 m/s2 for 40 sec. At the end of this 40 sec the spaceship is traveling at 5000 m/s. What was the speed of the spaceship before it turned on its rocket?