NAME_____DATE_____PER_____

CALCULATIONS OF MOTION

For all problems you must show the formula, work and correct units.

Speed = Distance/ Time
Distance = Speed X Time

$$\textbf{Acceleration} = \frac{\textbf{Final Velocity} - \textbf{Starting Velocity}}{\textbf{Time}}$$

1. A jogger runs the first 1000 m of a race in 250 sec. What is the jogger's speed?

2. A space shuttle travels in orbit at 21,000 km/hr. How far will it travel after 5 hrs?

3. Jack rides his skateboard a total distance of 120 m in 20 sec. What was his speed?

4. 5 seconds after he started Jack was at a distance of 30 meters. 10 seconds after he started he was at a distance of 70 meters. What was Jack's speed from time = 5 sec to time = 10 sec?

5. Did Jack travel at a constant speed? How do you know?

6. A car accelerates from 0 to 72 km/hr in 8 seconds. What is the car's acceleration?

7. A space ship is traveling at **20,000 m/sec**. At time = **5 sec** the rocket thrusters are turned on. At time = **55 sec** the space ship reaches a speed of **24,000 m/sec**. What is the space ship's acceleration?

8. A plane travels from California to New York. The plane travels 4800 km in 5 hours. What is the plane's **velocity?**

WRITE "A" IF IT IS ACCELERATION AND "N" IF NO ACCELERATION

1. Your pet dog runs in circles chasing its tail _____
2. A car slows down as it comes to a red light _____
3. You pedal your bicycle straight uphill at 5 km/hr. _____
4. You are walking in a straight line down the hallway to go to class. _____
5. You begin to walk faster as you realize you will be late for science class _____
6. During class you jump up and run to get a ruler because you love making graphs. ___