Name _____ Class _____ Date _____

Calculations of Motion

Solve the following problems. Show all your work. Remember to include the correct units.

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 hr?

Problems 3 and 4 refer to the table, which summarizes Jack's ride on his new skateboard.

Time (sec)	Distance (m)
0	0
5	30
10	70
15	90
20	120

3. What was Jack's speed from T = 5 sec to T = 10 sec?

4. What was Jack's average speed for the entire ride?

5. A car accelerates from 0 to 72 km/hour in 8 sec. What is the car's acceleration?

6. A science student drops a rock down a mine shaft. If it takes 3 sec for the rock to hit the bottom of the shaft, what is the speed of the rock just before impact?

7. A space ship is traveling at 20,000 m/sec. At T = 5 sec, the rocket thrusters are turned on. At T = 55 sec, the space ship reaches a speed of 24,000 m/sec. What is the space ship's acceleration?