Name_____ Date_____ Time_____

Calculating Speed, Time, Distance, and Acceleration

Equation: ***s***=$\frac{distance}{time}$, ***t***=$\frac{distance}{speed}$, ***d***= *s x t*, ***a***=$\frac{change\ in\ speed}{change\ in\ time}$, change in speed = final velocity-starting velocity

Directions: Use the equations above to answer the following questions. Show your work and include the proper units of measurement.

1. A football field is about 100m long. If it takes a person 20 seconds to run its length, how fast (spped) were they running?

2. The pitcher's mound in baseball is 85m from the plate. It takes 4 seconds for a pitch to reach the plate. How fast is the pitch?

3. If you drive at 100km/hr for 6 hrs, how far will you go?

4. If you run at 12m/s for 15 minutes, how far will you go?

5. Every summer I drive to Michigan. It is 3900km to get there. If I average 100km/hr, how much time will I spend driving?

6. A bullet travels at 850m/s. How long will it take a bullet to go 1km?

7. Every winter I fly home 3900km to Michigan. It takes 5 hours. What is my average speed?

8. The fastest train in the world moves at 500km/hr. How far will it go in 3 hours?

9. How long will it take light moving at 300,00km/s to reach the earth from the sun? The earth is 150,000,000km from the sun. Express your answer in minutes.

10. It is 21,000km around the earth's equator. The earth rotates once every 24 hours. How fast is the earth rotating at the equator?

11. A car goes from 0km/hr to 100km/hr in 10 seconds. What is the cars acceleration?

12. A bus slams on its breaks and goes from 30km/hr to 15km/hr in 4 seconds. What is the buses acceleration?

Part II Graphing

Directions: Using the data in the following table, construct a distance vs. time graph, then answer the questions about the graph.

Distance (m)	Time (s)
10	20
20	40
35	70
65	130
85	170
100	200

13. Does this graph represent constant or changing speed? How do you know?

14. Find the slope of the line and find the average speed.

Directions: Using the data in the following table, construct a distance vs. time graph, then answer the following questions about the graph.

Distance (m)	Time (s)
15	20
25	50
40	65
70	130
90	185
100	200

15. Does this graph represent constant or changing speed? How do you know?

16. Which section of the graph represents the highest speed?