INTRODUCTION TO THE LABORATORY

General Science 181

Complete the following exercises and turn in at the next lab session.
(Due August 31st 2007)
SHOW ALL WORK FOR PARTIAL CREDIT

1. Write the following numbers in scientific notation

12345.0	12.345	123.45	0.012345	0.000012345
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2. Give the number of significant digits in the following numbers.

123450	123.0	0.0123450	0.12345	12345.
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3. Add the following two numbers together. Keep the correct number of significant digits in the answer, round off properly if necessary, and then re-write the result in scientific notation.

1233.456 + 1.23467

Answer in decimal form_____
Answer in scientific notation form_____

4. Subtract the following two numbers. Keep the correct number of significant digits in the answer, round off properly if necessary, and then re-write the result in scientific notation.

1233.456 - 1.23467

Answer in decimal form_____
Answer in scientific notation form_____

5. Multiply the following two numbers. Keep the correct number of significant digits in the answer, round off properly if necessary, and then re-write the result in scientific notation.

1233.456 X 5.23467

Answer in decimal form_____
Answer in scientific notation form_____

6. Divide the following two numbers. Keep the correct number of significant digits in the answer, round off properly if necessary, and then re-write the result in scientific notation.

1233.456 / 5.23467

Answer in decimal form_____
Answer in scientific notation form_____

7 Multiply the following two numbers. Keep the associated errors in the result. Keep the correct number of significant digits in the answer, round off properly if necessary.

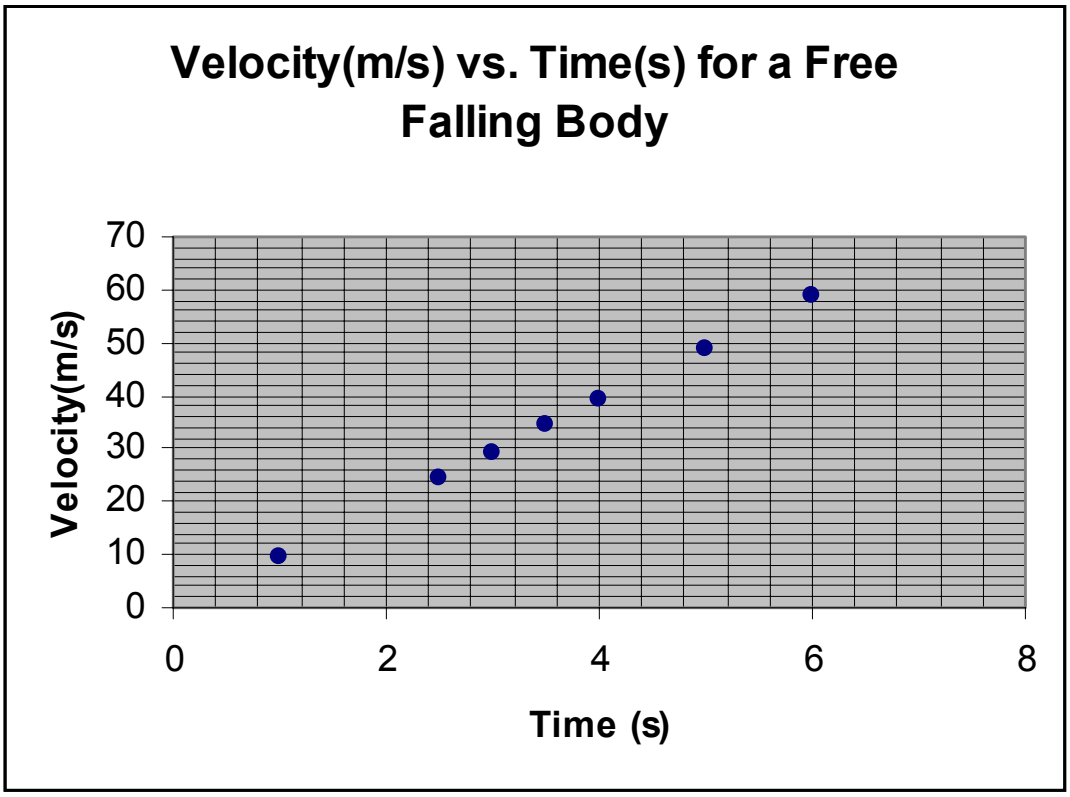
(12.056 +- 0.0005) m X (10.0245 +- 0.0005) m

8. Divide the following two numbers. Keep the associated errors in the result. Keep the correct number of significant digits in the answer, round off properly if necessary.

(120.056 +- 0.0005) m / (10.0245 +- 0.0005) m

9. Find the average of the following six numbers. Find the standard deviation Keep the correct number of significant digits in the answer, round off properly if necessary.
1.102, 10.23, 2.56236, 5.69, 20.2, 8.56

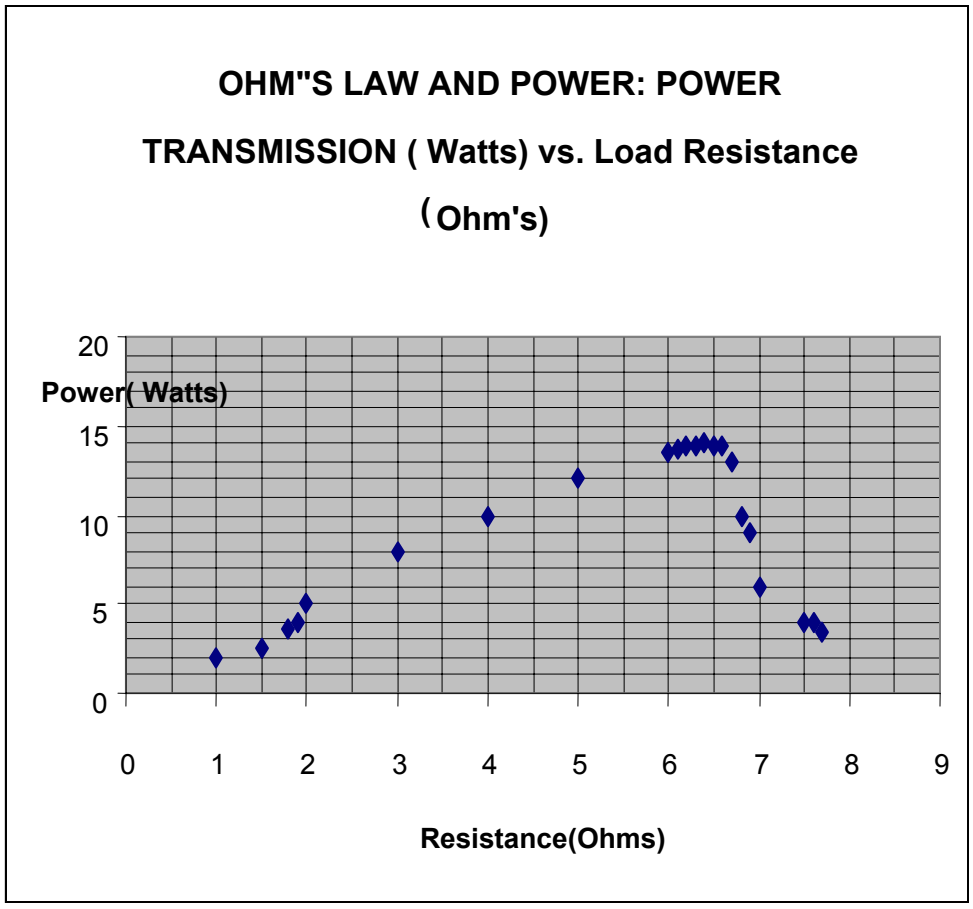
10. Graphs



Above is a graph of the Velocity of a free falling body as a function of time. Draw a "Best Fit". straight line through the data points. Note: see handout given to you in class (THIS IS NOT CONNECT THE DOTS)
Use your ruler to draw the line. Find the slope of the straight line using the following formula

Slope = (Y2-Y1)/ (X2-X1)

The two points (X2,Y2) and (X1,Y1) are points on the line. HOWEVER THEY ARE NOT ORIGINAL DATA POINTS. The two points should also be at opposite ends of the line.



Draw Smooth curve through this plotted data. AGAIN THIS IS NOT CONNECTING THE DOTS.

The Maximum Power is transferred at what resistance_____?