



Physics

Name: _____ Date: _____

Roll the Dice!

Materials: metric ruler
graph paper
2 different colored dice:
Red = X component White = Y component

Procedure:

1. Draw X and Y axes on your graph paper so that the origin is in the lower left of the paper.
2. Place a dot at the origin. This is your starting point.
3. Roll the dice. Record the numbers on the data table. Red = X distance. White = Y distance.
4. Plot this point on the graph paper.
5. Roll the dice again. Record the X and Y distances on the data table.
6. **Starting from the previous point**, plot the new position on the graph paper.
7. Repeat steps 5 & 6 until you have plotted 5 points on the graph paper. Connect the points.
8. Add the total in the X column and the total in the Y column of the data table.
9. Using a different color pencil or pen, Draw the line from the origin to the last point you plotted.
10. **Measure** the displacement from the origin to the last point.
11. **Calculate** the displacement using the Pythagorean Theorem.

Data Table

Roll #	X component	Y component
1		
2		
3		
4		
5		
Total		

Measured Displacement = _____

Calculated Displacement = _____

12. Compare the measured displacement with the calculated displacement.

Are the values equal? _____

Should the values be equal? _____ Why? or why not?: _____

If you answered yes to the previous question, but your values are NOT equal, what happened?