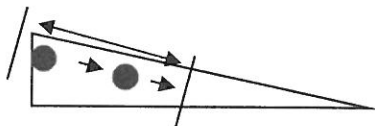


Acceleration/Velocity Lab – Part I

1. Set up a ramp with the angle of the incline at about 10° to the table.
2. **Your ramp is 150 cm, what would be the halfway mark?** _____
3. Measure both marbles and write the mass on your worksheet.
4. Measure the time required for the ball to travel from the top of the ramp to the **end of the ramp**. Repeat this measurement 2 more times and determine the average time for this length.
Why is measuring several times important? Accuracy!



5. Measure the time required for the ball to travel from the top of the ramp to the **halfway point**. Repeat this measurement 2 more times and determine the average time for this length.



6. Now set up a ramp with the angle of the incline at about 5° to the table.
7. Measure the time required for the ball to travel from the top of the ramp to the end of the ramp. Repeat this measurement 2 more times and determine the average time for this length.
8. Measure the time required for the ball to travel from the top of the ramp to the halfway point. Repeat this measurement 2 more times and determine the average time for this length.
9. Now use the small marble and repeat steps 1-5.
10. Record your times on the worksheet.

Acceleration Lab Part I

Name: _____
 Period: _____

Mass cup _____ Mass of cup + large marble _____ Mass of large marble _____
 Mass cup _____ Mass of cup + small marble _____ Mass of small marble _____

Large Marble - 10° Angle

Length of Ramp (cm)	Time 1	Time 2	Time 3	Average (Time 1+2+3)/3
Full length of the ramp				
Top of the ramp to the halfway mark				

1. What conclusion can you make about the velocity of the ball through the first half of the trip?
2. Is the ball accelerating as it rolls down the ramp?
3. Why do you think that? What evidence do you have?

Large Marble - 5° Angle

Length of Ramp (cm)	Time 1	Time 2	Time 3	Average (Time 1+2+3)/3
Full length of the ramp				
Top of the ramp to the halfway mark				

4. What happens to the acceleration as the angle changes from 10° to 5°?

Small marble - 10° Angle

Length of Ramp (cm)	Time 1	Time 2	Time 3	Average (Time 1+2+3)/3
Full length of the ramp				
Top of the ramp to the halfway mark				

1. The large and small marbles had different masses. Did the mass of the marble influence the acceleration?