

Names: _____

AP Calculus **Rolling Ball Activity**

Determine the ideal angle of an inclined plane in order for a ball to roll the furthest

Material: Inclined plane, tennis ball, protractor, measuring tape

Task:

- 1) Decide on a “starting point” along the inclined plane that you will use.
- 2) Choose different angles for the inclined plane, drop the ball from the “starting point” and let it roll down and along the corridor.
- 3) Record the angle of the inclined plane and the distance the ball rolled. (You might want to take more than one measure for each angle and take the mean). You can choose as many angles as you think relevant, but a minimum of 7, including “extreme” angles.
- 4) Using your data, create a scatterplot on your calculator or on a computer software and find a model for the distance the ball rolls in terms of the angle.
- 5) Algebraically determine the ideal angle in order to have the ball roll as far as possible.

End product: iBook chapter

- Remember that the end product is a new chapter in your iBook.
- During the activity, be sure to take photos, videos, etc. to use for your iBook.
- Combined with the Pyramid Activity, this will count as a project grade.
- Read the rubric carefully.