Name _____

Finding the Acceleration due to gravity

1) Collect data of bouncing ball using the calculator and motion detector.
2) Select data section. You want to limit data that you use to the area with the nicest curve. You want to include one entire bounce, but just one bounce.
    a. Select "Anlyz"
    b. Select "7: Select Region"
    c. It prompts for left bound, scroll until you are at the start of the portion of the graph you want. Then hit OK.
    d. It prompts for right bound, scroll until you are at the end of the portion of the graph you want. Then hit OK.
3) Find the line of best fit. You want the calculator to find the best possible approximation of the equation that describes this motion.
    a. Select "Anlyz"
    b. Select "3: Quadratic Fit"
    c. Write down the value you are given for a.
4) Calculate the acceleration due to gravity
    a. The acceleration due to gravity is half of the calculators value for a.
5) REPEATE 4 TIMES!!

Calculator best fit coefficient a	Acceleration due to gravity

Average acceleration:

Percent Error:

Proof of why acceleration due to gravity is 1/2a: