Assignment 1 Read Unit 1 Chapters 1 thru 5. Ex. 1.4.2 and 1.5.1 are due Thursday Sept. 1

Geometry of (M_1=70, M_2=10) *collision sequence to "game-over"*

Exercise 1.4.2: Continue the (v_1,v_2) , (y_1,y_2), and ($y_j(t)$) collision plots begun in class. See Figs. 4.7, 4.11, and 4.12. See also Lecture 2. These collisions involve (M_1=70, M_2=10) super-balls confined by frictionless gravity-free track between $y=0$ and $y=7.0$ with initial positions ($y_1(0)=1$, $y_2(0)=3$) and velocities ($v_1(0)=1= v_2(0)= -1$).
Continue until you reach the "game-over" point of <u>last</u> <u>possible</u> M_1-M_2 collision assuming the floor is open after *Bang-1* so both masses can fall thru indefinitely. Indicate where on your graph would be this last last collision.

Use the (v_1,v_2) , (y_1,y_2), and ($y_j(t)$) multi-graph paper provided in class. (Also available at end of Lecture 2.)

Matrix algebra of (M_1=70, M_2=10) *collision sequence to "game-over"*

Exercise 1.5.1: Check numerical values of velocities in Exercise 1.4.2 using matrix algebra methods described in Ch. 5 and Lecture 3. Use this to derive numerical values of positions up to "game-over" point.