Unit 0 HW #10

Drop Height	Rebound Height
150 cm	124 cm
70 cm	59 cm
120 cm	100 cm
100 cm	83 cm
110 cm	92 cm
40 cm	33 cm

1. DeShawna and her team gathered data for their ball and recorded it in the table shown at right. *Help*
   a. What is the rebound ratio for their ball?
   b. Predict how high DeShawna's ball will rebound if it is dropped from 275 cm. Look at the precision of DeShawna's measurements in the table. Round your calculation to a reasonable number of decimal places.
   c. Suppose the ball is dropped and you notice that its rebound height is 60 cm. From what height was the ball dropped? Use an appropriate precision for your answer.
   d. Suppose the ball is dropped from a window 200 meters up the Empire State Building. What would you predict the rebound height to be after the first bounce?
   e. How high would the ball in part (d) rebound after the second bounce? After the third bounce?

Month	Stamps
0	120
1	132
2	
3	
4	
5	

2. Lona received a stamp collection from her grandmother. The collection is in a leather book and currently has 120 stamps. Lona joined a stamp club, which sends her 12 new stamps each month. The stamp book holds a maximum of 500 stamps. *Help*
   a. Complete the table to the right.
   b. How many stamps will Lona have one year from now?
   c. Write an equation using function notation to represent the total number of stamps that Lona has in her collection after n months. Let the total be represented by $t(n)$.
   d. Solve your equation from part (c) for n when $t(n) = 500$. Will Lona be able to fill her book exactly with no stamps remaining? How do you know? When will the book be filled?