



d. Do the values in the two functions mean the exact same thing? Explain your reasoning.

e. Dean and Emilio, who are both members of the National Honor Society, decide to combine their donation amounts and use these totals toward their year-end community service project. Predict how many times more books Dean and Emilio will get on average on top of what they collect if they combine their efforts for the National Honor Society. Explain your prediction.

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f. Suppose that Dean collects 30 books and Emilio collects triple the number of books Dean collects. Determine the total amount of books that each student will donate. Then determine the total number of books they will record for their National Honor Society project. Show your work.

Name \_\_\_\_\_ Date \_\_\_\_\_

- g. Use your answer to part (b) to determine how many times more books they will get on average if they combine their books. Does this match your prediction?
- h. Let  $x$  represent the total number of books Dean and Emilio collect. Emilio collects three times as many books as Dean and together the total number of books they collect adds up to  $x$ . Write functions for Dean's and Emilio's collection efforts so that the functions represent each person's share of the total books collected.
- i. Add the functions from part (d) to make a new function,  $c(x)$ , which describes the total number of books Dean and Emilio will be able to donate to the Ogdenville Library.
- j. Explain what the rate of change and  $y$ -intercept of the combined function in part (e) mean in terms of this problem situation.

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