

34. **CONSUMER SPENDING** The average annual amount  $T$  (in dollars) spent on reading and entertainment and the average annual amount  $E$  (in dollars) spent on entertainment by consumers in the United States during the period 1985–2002 can be modeled by

$$T = \frac{1300 + 84x}{1 + 0.015x} \quad \text{and} \quad E = \frac{1100 + 64x}{1 + 0.0062x}$$

where  $x$  is the number of years since 1985. Write a model that gives the percent  $p$  (in decimal form) of the amount spent on reading and entertainment that was spent on entertainment as a function of  $x$ . Then approximate the percent spent on entertainment in 2000.

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35. **MULTIPLE REPRESENTATIONS** Football player Emmitt Smith's career number  $Y$  of rushing yards gained and his career number  $A$  of rushing attempts from 1990 (when he started playing professional football) through the 2002 football season can be modeled by

$$Y = \frac{860 + 1800x}{1 + 0.024x} \quad \text{and} \quad A = \frac{230 + 380x}{1 + 0.014x}$$

where  $x$  is the number of years since 1990.

- a. **Writing an Equation** A football player's rushing average is the number of rushing yards gained divided by the number of rushing attempts. Write a model that gives Smith's career rushing average  $R$  as a function of  $x$  for the period 1990–2002.
- b. **Making a Table** Make a table that shows Smith's approximate career rushing average (rounded to the nearest hundredth) for each year during the period. *Describe* how the career rushing average changed over time.
36. **TAKS REASONING** Baseball player Hank Aaron's career number  $B$  of times at bat and career number  $H$  of hits during the period 1954–1976 can be modeled by

$$B = \frac{300 + 700x}{1 + 0.01x} \quad \text{and} \quad H = \frac{62 + 240x}{1 + 0.017x}$$

where  $x$  is the number of years since 1954.

- a. **Model** A baseball player's batting average is the number of hits divided by the number of times at bat. Write a model that gives Hank Aaron's career batting average  $A$  as a function of  $x$ .
- b. **Decide** The table shows Aaron's actual career number of times at bat and actual career number of hits for three different years. For which year does the model give the best approximation of  $A$ ? *Explain* your choice.



Year	1954	1959	1976
Career times at bat	468	3524	12,364
Career hits	131	1137	3771