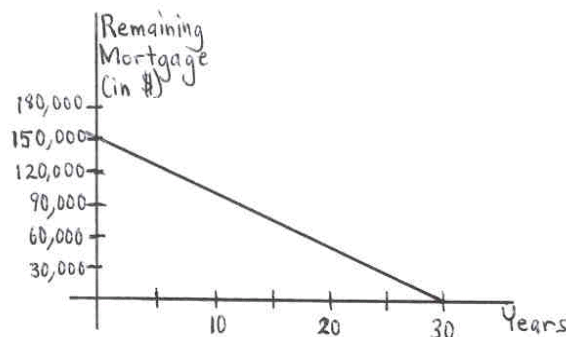


Section 1.2

1) A salesperson is paid \$200 a week, plus \$20 for every sale she makes. Let x = the number of sales made in a week. Let y = her weekly income in dollars. Model this situation numerically, graphically, and algebraically.

2) The graph shows the amount remaining to be paid on a 30-year mortgage over the life of the mortgage.



a) What is the slope of the graph and explain the meaning of the slope in this context?

b) What is the rate of change of the mortgage balance during this time period?

c) Identify the horizontal and vertical axis intercepts and explain their significance to the mortgage holder.

d) What is the equation of the line?

3) According to a 1979 *Build and Blood Pressure Study* by the Society of Actuaries, the average weight w (in pounds) of American men in their sixties for various heights (in inches) is given in the following table.

h	w
68	167
69	172
70	176
71	181
72	186
73	191
74	196
75	200

a) Use your calculator to construct a scatter plot of the data using the horizontal axis for heights.

b) Do the data fall on a line?

c) Find a linear model for these data.

d) Use the model to estimate the average weight of all men in their sixties whose height is 71.25 inches.

e) Use the model to estimate the average weight of all men in their sixties who are 5'6" tall.

f) Use the model to estimate the average height of all men in their sixties who weigh 320 pounds.

4) Consider the following data from the World Almanac.

Year	Total Personal Income
1990	\$4,679,800,000,000
1991	\$4,828,400,000,000
1992	\$5,058,100,000,000
1993	\$5,375,100,000,000
1994	\$5,701,700,000,000

Align this data to make the numbers more manageable.

Section 1.3

1) Suppose \$1000 is deposited into an account that earns 4% interest compounded annually and no further deposits or withdrawals are made. Let $A(t)$ denote the amount in the account t years after the initial deposit. Find a formula for $A(t)$ and graph it.