Exercise 40

For the following exercises, use the median home values in Mississippi and Hawaii (adjusted for inflation) shown in Table 2. Assume that the house values are changing linearly.

Year	Mississippi	Hawaii
1950	$25,200	$74,400
2000	$71,400	$272,700

Table 2

If these trends were to continue, what would be the median home value in Mississippi in 2010?

Solution

To predict the median home value in Mississippi in 2010, an equation of the home price P has to be written. Let t be the number of years after 1950. When $t = 0$, $P = 25\,200$, and when $t = 50$, $P = 71\,400$: $(0, 25\,200)$ and $(50, 71\,400)$. Determine the slope.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{71\,400 - 25\,200}{50 - 0} = \frac{46\,200}{50} = 924$$

Now use the point-slope formula with either of the two points to get the equation of the line.

$$y - 25\,200 = 924(t - 0)$$

$$y - 25\,200 = 924t$$

$$y = 924t + 25\,200$$

Plug in $t = 60$ to determine the home value in 2010.

$$y = 924(60) + 25\,200 = 80\,640$$

Therefore, the median home price in Mississippi in 2010 will be $80,640, assuming the rate of home value increase remains constant.