

We looked at the following problem previously and use the slope-intercept form to find the equation of the line.

HIV infections – In 1998 there were 47 million people worldwide who had been infected with HIV. At that time the infection rate was 5.8 million people per year.

a) Write a formula for a linear function f that models the total number of people that were infected with HIV x years after 1998. Starting amount: 47 Rate of change: 5.8

$$\text{So, } f(x) = 5.8x + 47 \text{ (in millions)}$$

b) Estimate the number of people that may be infected in the year 2002. Estimate the number of people that may be infected in the year 2006.

If we changed the problem slightly, the point-slope form would be more useful. This is because we no longer have a “starting” value where $x = 0$: “ x ” is now the year, not years after 1998. Let’s see how this changes the formula.

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a) Write a formula for a linear function f that models the total number of people that were infected with HIV in year x .

b) Estimate the number of people that may be infected in the year 2002.

Estimate the number of people that may be infected in the year 2006.