**Internet Users** The percent of the U.S. population with Internet access can be modeled by \( y = 1.36x + 68.8 \), with \( x \) equal to the number of years after 2000. When does this model indicate that the U.S. population with Internet access will reach 96%? (Source: Jupiter Media Metrix)\(^1\)

Keep in mind that \( x \) represents the number of years after 2000 and \( y \) is the percent of households with Internet access.

We can solve this problem two ways: Algebraically and Graphically.

Let’s start by solving algebraically. That is, we’ll use the given equation letting \( y = 96 \) and solving for \( x \) to find the year.

\[
96 = 1.36x + 68.8 \\
27.2 = 1.36x \\
20 = x
\]

This tells us that 20 years after 2000, in 2020, 96% of the U.S. population will have Internet access.

Next, we’ll solve the same problem graphically.

I’ve put \( x \) (the independent variable) on the horizontal axis and \( y \) (the dependent variable) on the vertical axis.

Graph two lines: \( y_1 = 1.36x + 68.8 \) and \( y_2 = 96 \)

\( y_1 \) shows the relationship between \( x \) and \( y \) as defined by the given equation.

\( y_2 \) shows a constant function that represents a value of 96.

These two lines intersect when \( x = 20 \) so we can say that 20 years after 2000, in 2020, 96% of the U.S. population will have Internet access.

\(^1\)Harshbarger/Yocco, *College Algebra In Context*, 5e, p. 103, #68.