$f(x) =$ $\frac{1}{2}x + 12.5$

4. What is the slope of your line? m = $\frac{1}{2}$
Interpret its meaning. Does it make sense in the context of this situation? Please use complete sentences to respond to these questions.

Having a slope of "½" makes sense especially when looking at the years between 1993 and 2005. The slope points to the fact that every two years 100,000 people are added to the population. In 1993 there were 1,900,000; in 1999 there were 2,200,000, meaning there was an increase of 300,000. We can safely assume that every two years approximately 100,000 were added into the population. We can see a similar pattern from 1999 to 2005.

5. Find the value of $f(45)$ using your function from part 3. Show your work, then write your result in the blank below.

$$f(45) = \frac{1}{2}\left(\frac{45}{1}\right) + 12.5$$
$$= 22.5 + 12.5 = 35$$

$f(45) =$ 35

Write a sentence interpreting the meaning of $f(45)$ in the context of this project.

6. Use your function from part 3 to approximate in what year the residential population of Utah reached 2,000,000. Show your work.

$$20 = \frac{1}{2}x + 12.5$$
$$-12.5 \quad -12.5$$
$$7.5 = \frac{1}{2}x$$

$$\frac{2}{1} \cdot \frac{1}{2}x = 7.5 \cdot 2$$
$$x = 15$$

1980 + 15 = 1995

In 1995 ≈ 2,000,000