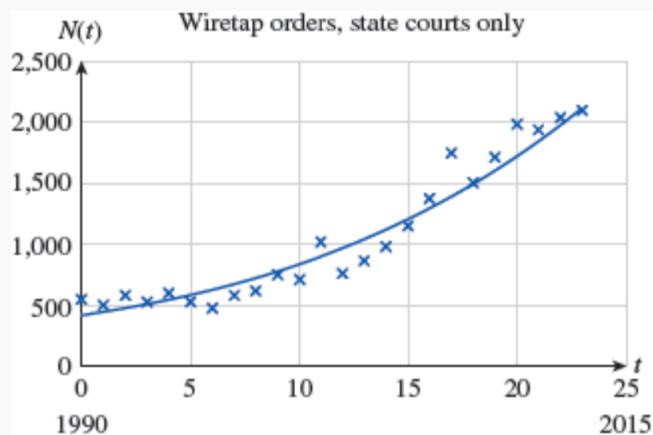


88. **Big Brother** The following chart shows the total number of wiretaps authorized each year by U.S. state courts from 1990 to 2013. ($t = 0$ represents 1990.) *



These data can be approximated by the model

$$N(t) = 410e^{0.071t} \quad (0 \leq t \leq 23).$$

- Find $N(20)$ and $N'(20)$. Be sure to state the units of measurement. To how many significant digits should we round the answers? Why?
- The number of people whose communications are intercepted averages around 100 per wiretap order. What does the answer to **part (a)** tell you about the number of people whose communications were intercepted? *
- According to the model, the number of wiretap orders each year (choose one)
 - increased at a linear rate