1. Solve the inequality \( \frac{3x-4}{x+1} \leq 0 \).

2. Find an equation that represents a parabola with vertex at the point \((2, 5)\) which passes through the point \((0, 8)\).

Shown below is a chart of a certain stock during the years 1986 to 1996. Answer each of the next two questions about the stock.

3. By what percentage increase did the stock grow during the two years between 1988 and 1990?

4. What is the slope of the line joining the bullets at \((86, 50)\) and \((96, 120)\)?

5. What is the distance between the points \((1, 5)\) and \((9, 11)\)?

6. A rectangular field is half as wide as it is long and completely enclosed by \(x\) yards of fencing. The area in terms of \(x\) is

7. What is the domain of the function \( f(x) = \log_3(2|x - 1| - 5) \)?
8. Let \( f \) the be function defined by
\[
f(x) = \begin{cases} 
2x - 3 & \text{if } x \geq 2 \\
1 - x^2 & \text{if } x < 2
\end{cases}
\]

What is \( f(f(2)) \)?

9. What is the center of the circle defined by \( x^2 - 3x + y^2 + 10y = 11 \).

10. The half-life of radioactive Carbon 14 is known to be 5700 years. Assume that we start with 10 grams of Carbon 14, and it dissipates exponentially (exponential decay), how much of it is left after 2000 years.