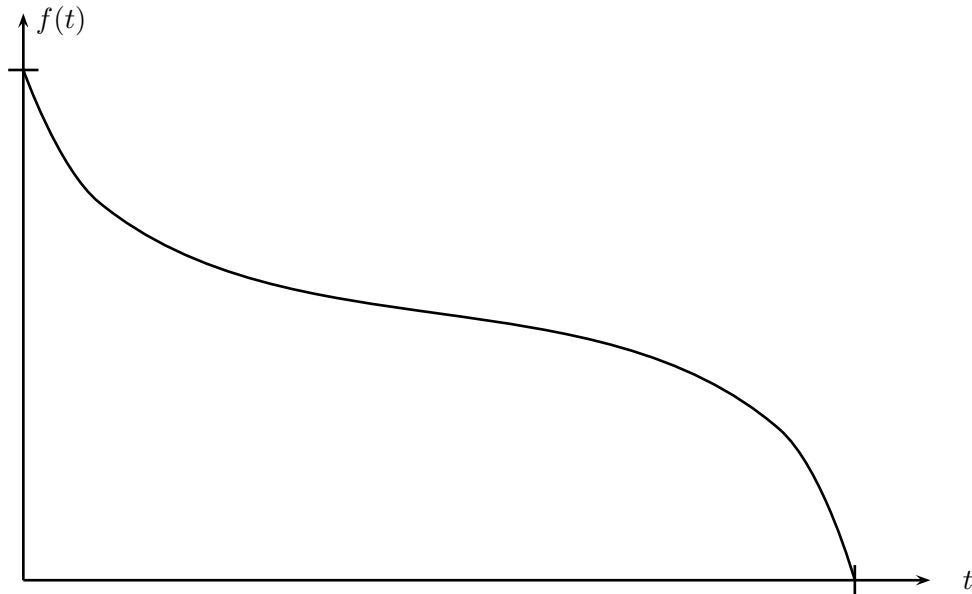5. The graph below shows an approximation to the stock price, $P = f(t)$ in dollars, of Lehman Brothers Inc. (LEH) with t measured in months since the stock's highest point in February 2007 to the company's ultimate bankruptcy in September 2008 (t=19).

(a) (2 points) Explain why f is invertible on the indicated domain.

(b) (3 points) Interpret, in the context of this problem, $f^{-1}(5)$.

(c) (4 points) If $\frac{dP}{dt}\big|_{t=16} = -5$ and $f(16) = 25$, find an equation of the line tangent to the curve at $t = 16$.

(d) (3 points) Using part (c), what month would your tangent line have predicted LEH's stock price would reach zero?