

Project: Bankruptcies The table shows the numbers of bankruptcies filed (in thousands) in the United States from 2000 through 2011.

(Source: *Administrative Offices of the U.S. Courts*)

Year	Bankruptcies
2000	1276.9
2001	1386.6
2002	1505.3
2003	1650.3
2004	1635.7
2005	1637.3
2006	1484.6
2007	751.1
2008	967.8
2009	1306.3
2010	1572.6
2011	1529.6

- Use the *regression* feature of a graphing utility to find a piecewise-defined cubic model for the data. Let t represent the year, with $t = 0$ corresponding to 2000.
- Use the graphing utility to graph the model from part (a) and the original data in the same viewing window. How well does the model fit the data? Explain your reasoning.
- Estimate the slope of the graph when $t = 3$, $t = 5$, $t = 9$, and $t = 10$. Interpret your answers in the context of the problem.
- Use the graphing utility to graph the tangent lines to the model when $t = 3$, $t = 5$, $t = 9$, and $t = 10$.
- Compare the slopes given by the graphing utility with your estimates in part (c).