

Project: Veterinarians The table shows the numbers of veterinarians employed in the United States from 2003 through 2017. (Source: U.S. Bureau of Labor Statistics)

Spreadsheet at
LarsonPreCalculus.com

DATA	Year	Veterinarians Employed
	2003	43,890
	2004	46,090
	2005	47,870
	2006	49,750
	2007	50,790
	2008	53,110
	2009	54,130
	2010	54,480
	2011	55,410
	2012	56,020
	2013	59,230
	2014	62,470
	2015	65,650
	2016	67,650
	2017	69,370

- Use the *regression* feature of a graphing utility to find a cubic model for the data. Let t represent the year, with $t = 3$ corresponding to 2003.
- Use the graphing utility to graph the model found in part (a) and the original data in the same viewing window. How well does the model fit the data? Explain.
- Estimate the slope of the graph when $t = 5$, $t = 9$, $t = 10$, and $t = 13$. Interpret your answers in the context of the problem.
- Use the graphing utility to graph the tangent lines to the model when $t = 5$, $t = 9$, $t = 10$, and $t = 13$.
- Compare the slopes given by the graphing utility with your estimates in part (c).