

Name:

Period:

Date:

Math Lab: Modeling with Krispy Kreme

The total revenues R (in millions of dollars) for Krispy Kreme from 2000 through 2007 are shown in the table. A model that represents these data is given by

$$R = 3.0711t^4 - 42.803t^3 + 160.59t^2 - 62.6t + 307$$

$$0 \leq t \leq 7$$

where t represents the year, with $t = 0$ corresponding to 2000.



Year	Revenue, R
2000	300.7
2001	394.4
2002	491.5
2003	665.6
2004	707.8
2005	543.4
2006	461.2
2007	429.3

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- (a) Use a graphing calculator to create a scatter plot of the data. Then graph the model in the same viewing window. How well does the model fit the data? Explain.
- (b) Use the MAX and MIN feature to approximate any relative extrema (critical points) of the model over its domain. Round to the nearest hundredth.
- (c) Approximate the intervals over which the revenue for Krispy Kreme was increasing and decreasing over its domain.

