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Corvettes, curve fitting, and calculus.
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Summary: Sometimes the best mathematics problems come from the most unexpected situations. Last summer, a Corvette raced down a local quarter-mile drag strip. The driver, a family member, provided the spectators with time and distance-traveled data from his time slip and asked "Can you calculate how many seconds it took me to go from 0 to 60 mph?" Although initially this question seemed like a straightforward one, it was soon clear that depending on the solution strategy and assumptions, different answers were possible. Thus began the ongoing discussions with colleagues – and with high school mathematics teacher friends over pizza and with mechanical engineer family members at holiday dinners – to collectively decide on the "best" method. The mathematical discussions that arose on how to best solve the problem prompted two questions: (1) What makes this problem so intriguing? and (2) What would students do? Any interesting mathematical task will likely encourage teachers to wonder what aspects of the task make it special. The authors of this article wanted to know why this problem generated these mathematical conversations and how they could incorporate it into a calculus class. Insights from colleagues and students revealed several qualities of the problem that they believe contribute to its intrigue and worth. What they found illustrates what they consider to be three hallmarks of a good problem: (1) The problem solver must decide what mathematics to introduce; (2) The task users real-life data; and (3) The task requires mathematical modeling. A nonroutine task with three hallmarks of a good problem offers the flexibility to model real-life, messy data. (ERIC)

Classification: M50 I20 N50
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http://www.nctm.org/Publications/Mathematics-Teacher/2015/Vol109/Issue2/Corvettes,-Curve-Fitting,-and-Calculus/