Results: Calculus Challenge Problem # 5

I apologize for the slow response the past two weeks…

Students solved this problem with a variety of approaches. Some first found the general case, then used the values given as a specific case. Others solved the specific problem, then mimicked their work with parameters to find a more general solution. Some solved $\frac{dV}{dx} = 0$ to find critical values, while others showed that the equal area equation was equivalent to $\frac{dV}{dx} = 0$. Some groups made the mistake of tried to prove the general case by simply looking at several different examples and seeing that they also worked.

Walton High School again did a nice job of generalizing the results. They developed a proof that the equal areas result works for any regular polygon and did a separate derivation for an arbitrary triangle. Once again, really nice work!

School	Location	Teacher	Score
Farmington High	Farmington CT	Chris Lepi	2
La Habra High School (B)	La Habra, CA	Barbara De Roes	5
Hickman High School	Columbia, MO	Deanna Wasman	3
Land O'Lakes High School	Land O'Lakes, FL	Patrick Connolly	4
Walton High School	Marietta, GA	Tom Fulton	5
The Westminster Schools	Atlanta, GA	Ellen Vesey	5

Cumulative Summary

School	Location	Teacher	Score
Brookwood High School	Snellville, GA	Chris Michael	10
Diamond Bar High School	Diamond Bar, CA	Howard Alcosser	14
Farmington High	Farmington CT	Chris Lepi	13.5
James River High School	Midlothian, VA	Jan Nelson	4
La Habra High School (B)	La Habra, CA	Barbara De Roes	25
Hickman High School	Columbia, MO	Deanna Wasman	18.5
Land O'Lakes High School	Land O'Lakes, FL	Patrick Connolly	21.5
Rockford High School		Fred Reusch	19
Shawnee Mission South High School	Overland Park, KS	Vince Lavergne	5
Seaholm High School	Birmingham, MI	Eric Bruns	12
Walton High School	Marietta, GA	Tom Fulton	23
West Lafayette Jr. Sr. High School	West Lafayette, IN	Joyce Gates	5
The Westminster Schools	Atlanta, GA	Ellen Vesey	22.5