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| Test 1Dusty Wilson Math 152No work = no creditNo Symbolic Calculators | **Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*A mathematician is a machine for turning coffee into theorems.* Paul Erdös (1913 - 1996) Hungarian mathematician |

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| Warm-ups (1 pt each): | =\_\_\_\_\_ | =\_\_\_\_\_ | =\_\_\_\_\_ |

(1 pt) According to Erdös (see quote under your name), what fuels the mathematicians theoretical fervor?

(10 pts) Integrate 

(10 pts) Approximate the definite integral  using Simpson’s Rule with *n* = 4. Give your answer to five decimal places and show enough work to convince me you know what you are doing.

The next two questions are about Riemann Sums and the Definition of the Definite Integral.

(10 pts) Use the Definition of the Definite Integral to write the  as the limit of Riemann Sums. Do not evaluate.

(10 pts) Evaluate 

(10 pts) Integrate 

(10 pts) Evaluate 

 (10 pts) Write the Fundamental Theorem of Calculus (part 2).

If *f* is continuous on [a, b], then …

(10 pts) Set up an integral to represent the **area** enclosed by the line  and the parabola  (Area: )

(10 pts) Set up an integral to find the **volume** of the solid formed when the region bounded between  and *y* = 4 is rotated about the *x*-axis. Do not evaluate. (Volume: )