**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**A.P. Calculus 1, Mrs. Sulkes**

**Feb. 14th, 2013**

**Happy Valentine’s Day!!**



**First Fundamental Theorem of Calculus!**

**First Fundamental Theorem of Calculus**

If a function f is continuous on the closed interval [a,b] and F is an antiderivative of f on the interval [a,b], then



**Example:** Evaluate 

**Example**: Evaluate 

**Putting it all together!**

1. Rewrite the following limit as a definite integral.

 on [-2,1] =

1. What does the value of this definite integral represent? Be specific.
2. Let’s evaluate this definite integral using four different methods:

**Method 1**: Using the Limit Process of a Riemann Sum

**Method 2**: Using a graph and geometric formulas

**Method 3:** Using the First Fundamental Theorem of Calculus

**Method 4:** Using the calculator – two ways

1. Math →9→enter→(enter the function, x, -2,1) →enter
2. Enter function in y =



2nd Trace (calc) →7→enter→lower limit ? -2 → upper limit? 1 →enter