

2. (8 pts.) Circle **T** if the phrase completing the sentence is true, or **F** if it is false. You need not explain your answer.

The function $f(x) = \sin(x^2)$

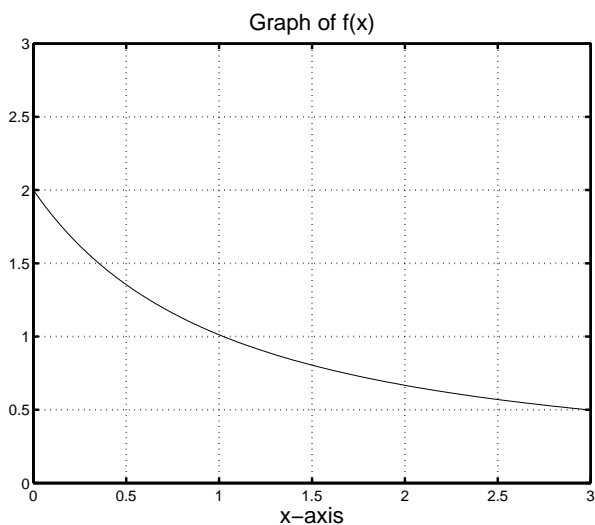
(i) *does not have an antiderivative.* T **F**

(ii) *has $-\frac{\cos(x^2)}{2x}$ as an antiderivative.* T **F**

(iii) *has exactly one antiderivative.* T **F**

(iv) *has antiderivative $2x \cos(x^2)$.* T **F**

3. (8 points) For the function whose graph is shown in the figure, the numerical values of the five numbers given by the exact value of the integral (correct to the indicated number of places), the Left Hand Sum, the Right Hand Sum, the Trapezoid Rule, and the Midpoint Rule, with $n = 60$ are listed below. Match them with the corresponding approximation, labeling each number with either EXACT, LHS, RHS, TRAP, or MID. (No explanation is required.)



2.7560 RHS

2.7930 MID

2.7932 EXACT

2.7936 TRAP

2.8311 LHS