

# Rectangular approximation method worksheet

$$\int_a^b f(x) dx = \int \quad \quad \quad dx \quad \quad \quad \text{Sketch **graph** of function}$$

Lower bound:  $a =$

Upper bound:  $b =$

Number of subintervals:  $N =$

Width of each subinterval:  $\Delta x = \frac{b-a}{N} =$

Rectangular approximation method (circle one): **LRAM** | **RRAM** | **MRAM**

Subinterval	Evaluation point	Height
$n$	$x_i^*$	$f(x_i^*)$
1	$x_1^* =$	
2	$x_2^* =$	
3	$x_3^* =$	
4	$x_4^* =$	
5	$x_5^* =$	
6	$x_6^* =$	
7	$x_7^* =$	
8	$x_8^* =$	
9	$x_9^* =$	
10	$x_{10}^* =$	
		$\Sigma =$

Area:

$$\begin{aligned} \int_a^b f(x) dx &\approx h_1\Delta x + h_2\Delta x + \dots + h_N\Delta x \\ &= (h_1 + h_2 + \dots + h_N)\Delta x \\ &= \end{aligned}$$

If you have computed LRAM and RRAM, the trapezoidal approximation method area will be

$$\text{TAM} = \frac{\text{LRAM} + \text{RRAM}}{2}$$