Trapezoidal approximation method worksheet

$\int_a^b f(x)\,\mathrm{d}x = \int \qquad \mathrm{d}x$

Sketch **graph** of function

Lower bound: $a =$

Upper bound: $b =$

Number of subintervals: $n =$

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

Subinterval	**Left evaluation point**	**Left height**	**Right evaluation point**	**Right height**	**Average height**
i	x_i^{L}	$f\left(x_i^{\mathrm{L}}\right)$	x_i^{R}	$f\left(x_i^{\mathrm{R}}\right)$	$\frac{f\left(x_i^{\mathrm{L}}\right)+f\left(x_i^{\mathrm{R}}\right)}{2}$
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		$\Sigma =$		$\Sigma =$	

Area:

$$\begin{aligned}\int_a^b f(x)\,\mathrm{d}x &\approx h_{\mathrm{AVG},1}\Delta x + h_{\mathrm{AVG},2}\Delta x + \cdots + h_{\mathrm{AVG},N}\Delta x \\ &= \left(h_{\mathrm{AVG},1} + h_{\mathrm{AVG},2} + \cdots + h_{\mathrm{AVG},N}\right)\Delta x \\ &=\end{aligned}$$

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