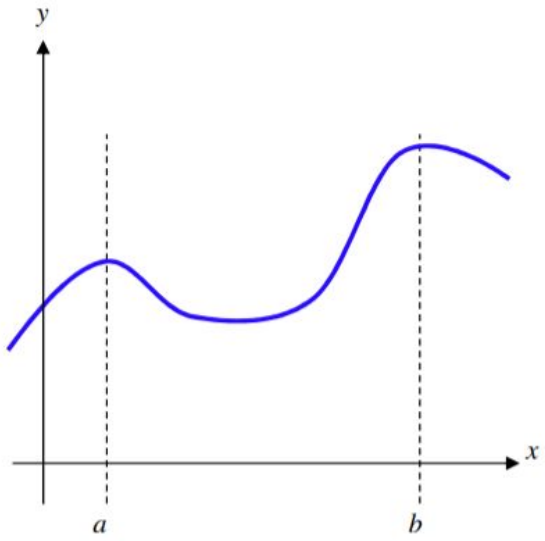
Trapezoidal Rule:



1. The table below gives the level of a person's cholesterol at different times during a 10-week treatment period. What is the average level over this 10-week period obtained by using a trapezoidal approximation using the subintervals $[0, 2]$, $[2, 6]$, and $[6, 10]$?

Time (weeks)	0	2	6	10
Level	210	200	190	180

2. Use the function values in the following table and the trapezoidal rule with $n = 6$ to approximate $\int_2^8 f(x)dx$.

x	2	3	4	5	6	7	8
$f(x)$	16	19	17	14	13	16	20

3. The function f is continuous on the closed interval $[0, 6]$ and has the values given in the table above. The trapezoidal approximation for $\int_0^6 f(x)dx$ found with 3 subintervals of equal length is 52. What is the value of k?

x	0	2	4	6
$f(x)$	4	k	8	12

5. Use the trapezoidal rule with $n = 4$ to approximate the value of $\int_1^2 \frac{1}{x}dx$. Use the concavity of the function to predict whether the approximation is an overestimate or an underestimate. Find the integrals exact value to check your answer.