

§4.2A: Trapezoidal Sum

“I WILL ...

...approximate a definite integral using the Trapezoidal Sum”

I. Trapezoidal Sum

A. To evaluate a definite integral involving a function whose anti-derivative cannot be found

B. Integral: $\int_a^b f(x)dx =$ _____

C. Area of Trapezoidal Rule: _____

D. Change of x : _____

Ex 1: Use the Trapezoidal Rule to approximate the value of $\int_1^5 (x^2 + 3)dx$ for $n = 4$.

Ex 2: Use the Trapezoidal Rule to approximate the value of $\int_1^3 (4 - x)^2 dx$ for $n = 4$.

Your Turn: Use the Trapezoidal Rule to approximate the value of $\int_1^9 x^2 dx$ for $n = 4$.

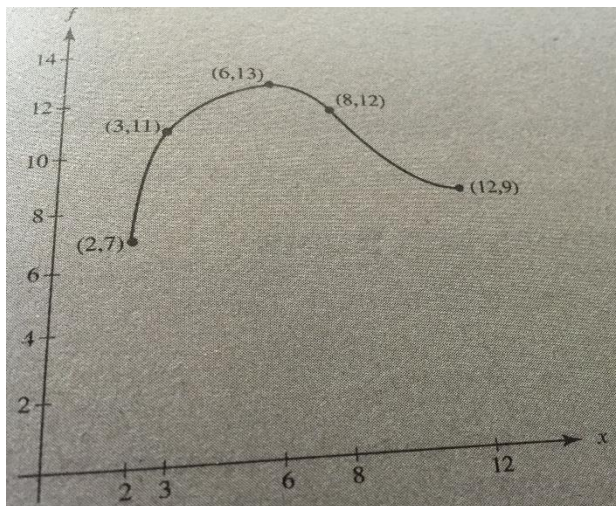
Ex 3: Use the Trapezoidal Rule to approximate the value of $\int_1^7 f(x)dx$

x	1	2	5	6	7
$f(x)$	2	3	-1	4	8

Your Turn: Use the Trapezoidal Rule to approximate the value of $\int_1^{13} f(x)dx$.

x	1	3	8	12	13
$f(x)$	2	5	3	1	4

AP1) The graph of f is shown below. Approximate $\int_2^{12} f(x) dx$ using the trapezoid approximation.



- (A) 44
- (B) 88
- (C) 112
- (D) 224