

Calculus Riemann Sum with Definite Integrals

Lesson 296 | Calculus AB | Riemann sums

<https://www.youtube.com/watch?v=TLj1pP7gRPM>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Approximate the integral of $f(x)=9x+8$ on $[0,5]$ using 7 equal subintervals. Compute left and right Riemann sums.

02

Approximate the integral of $f(x)=13x+5$ on $[0,7]$ using 7 equal subintervals. Compute left and right Riemann sums.

03

Approximate the integral of $f(x)=8x+13$ on $[0,5]$ using 5 equal subintervals. Compute left and right Riemann sums.

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04

Approximate the integral of $f(x)=9x+4$ on $[0,7]$ using 4 equal subintervals. Compute left and right Riemann sums.

05

Approximate the integral of $f(x)=5x+13$ on $[0,6]$ using 2 equal subintervals. Compute left and right Riemann sums.

06

Approximate the integral of $f(x)=7x+8$ on $[0,7]$ using 5 equal subintervals. Compute left and right Riemann sums.

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01

Approximate the integral of $f(x)=9x+8$ on $[0,5]$ using 7 equal subintervals. Compute left and right Riemann sums.

$\Delta x=5/7$. Left sum $\Delta x \sum_{j=0}^6 (9j\Delta x+8)=955/7$. Right sum $1180/7$. The increasing integrand makes left an underestimate and right an overestimate.

02

Approximate the integral of $f(x)=13x+5$ on $[0,7]$ using 7 equal subintervals. Compute left and right Riemann sums.

$\Delta x=7/7$. Left sum $\Delta x \sum_{j=0}^6 (13j\Delta x+5)=308$. Right sum 399. The increasing integrand makes left an underestimate and right an overestimate.

03

Approximate the integral of $f(x)=8x+13$ on $[0,5]$ using 5 equal subintervals. Compute left and right Riemann sums.

$\Delta x=5/5$. Left sum $\Delta x \sum_{j=0}^4 (8j\Delta x+13)=145$. Right sum 185. The increasing integrand makes left an underestimate and right an overestimate.

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04

Approximate the integral of $f(x)=9x+4$ on $[0,7]$ using 4 equal subintervals. Compute left and right Riemann sums.

$\Delta x=7/4$. Left sum $\Delta x \sum_{j=0}^3 (9j\Delta x+4)=1547/8$. Right sum $2429/8$. The increasing integrand makes left an underestimate and right an overestimate.

05

Approximate the integral of $f(x)=5x+13$ on $[0,6]$ using 2 equal subintervals. Compute left and right Riemann sums.

$\Delta x=6/2$. Left sum $\Delta x \sum_{j=0}^1 (5j\Delta x+13)=123$. Right sum 213 . The increasing integrand makes left an underestimate and right an overestimate.

06

Approximate the integral of $f(x)=7x+8$ on $[0,7]$ using 5 equal subintervals. Compute left and right Riemann sums.

$\Delta x=7/5$. Left sum $\Delta x \sum_{j=0}^4 (7j\Delta x+8)=966/5$. Right sum $1309/5$. The increasing integrand makes left an underestimate and right an overestimate.