

Friday, September 6

Evaluate the class...what do you like,
what would you change, etc.

Physics
Session
Tomorrow



September 6

Students will verbally explain how to
estimate the area under a curve using
RAM

(using the words:
right, left, midpoint, area, bounds, exact,
approximation...)

Summation Notation

$$\sum_{x=a}^b f(x)$$

Sum of all $f(x)$
from $x=a$ to $x=b$
where a & b are positive
integers (or zero)

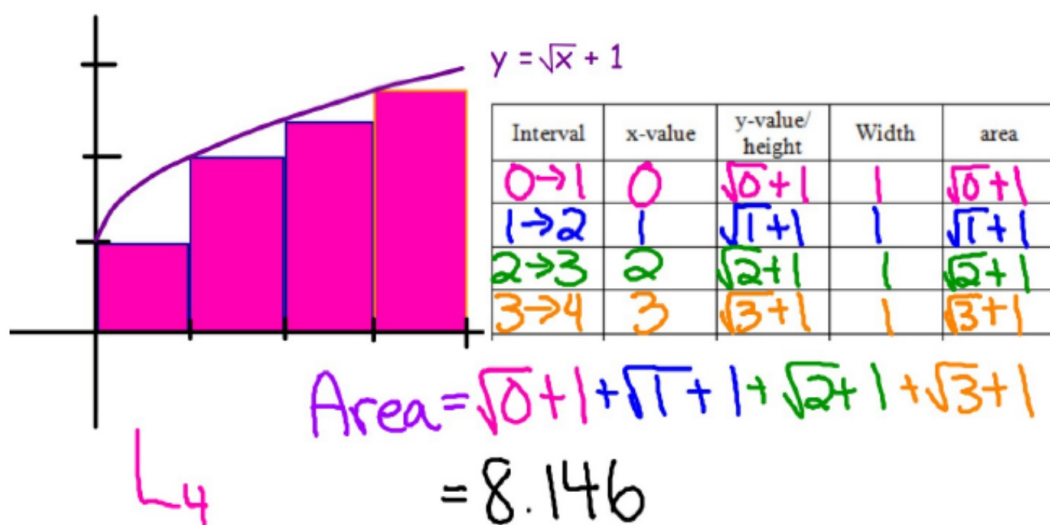
$$\sum_{x=1}^6 x$$

$$= 1+2+3+4+5+6 = 21$$

$$\sum_{x=3}^5 x^2$$

$$= 3^2 + 4^2 + 5^2$$

$$= 9 + 16 + 25 = 50$$



$$= \sum_{x=0}^3 (\sqrt{x} + 1)(1)$$

$$R_N = \Delta x \sum_{j=1}^N f(a+j\Delta x)$$

Riemann
Sum

(same as RAm)

$$\text{Area} \approx \sum_{k=1}^n \underbrace{f(x_k)}_{\text{height}} \underbrace{\Delta x_k}_{\text{width}}$$

$$f(x) = x^2 + 2$$

$$\text{exact area} = 81.667$$

- a. Consider the function $F(x) = \frac{x^3}{3} + 2x$. Compute $F(6) - F(1)$. How does this value compare to the exact answer in questions 1, 2, and 3? What is the relationship between F and f ?