Introduction to Integration (Integrals)

Now that we are finished with curve sketching we will look at integration.

Finding an integral is the reverse of finding a derivative.

Derivatives found the rate of change or slope of a curve.

Ex. the derivative(slope) of a displacement- time graph gives the velocity

Integration can be used to find things like displacement, area and volume.

To begin it is easiest to think of integration as finding the area under the curve.

Ex. finding the integral(area under the curve) of a velocity-time graph gives displacement

Getting Started With Integration

Usually I start with using rectangles(left and right hand) to estimate the area under the curve.

Next I review summation formulas and find the integral (area under the curve) using the definition.(long way)

This is similar to how we calculated derivatives. First we found the derivative using the definition(long way) and then we learned the quick ways(power,product quotient, chain).

Do to the challenging circumstances I am going to skip over the definition for now and come back to it later.

I do want you to checkout these great youtube videos below that explain estimating area under the curve using rectangles and the other is the definition of a definite integral.

Think of integration as a way of adding slices to find the whole. In the video the slices will be rectangles.

Finally it is a must that you know your derivatives. (power,product,quotient,and chain rules)

(derivatives- trig., inverse trig., exponential and logarithmic)

https://www.youtube.com/watch?v=Gi8_a7NlKAQ

https://www.youtube.com/watch?v=LkdodHMcBuc