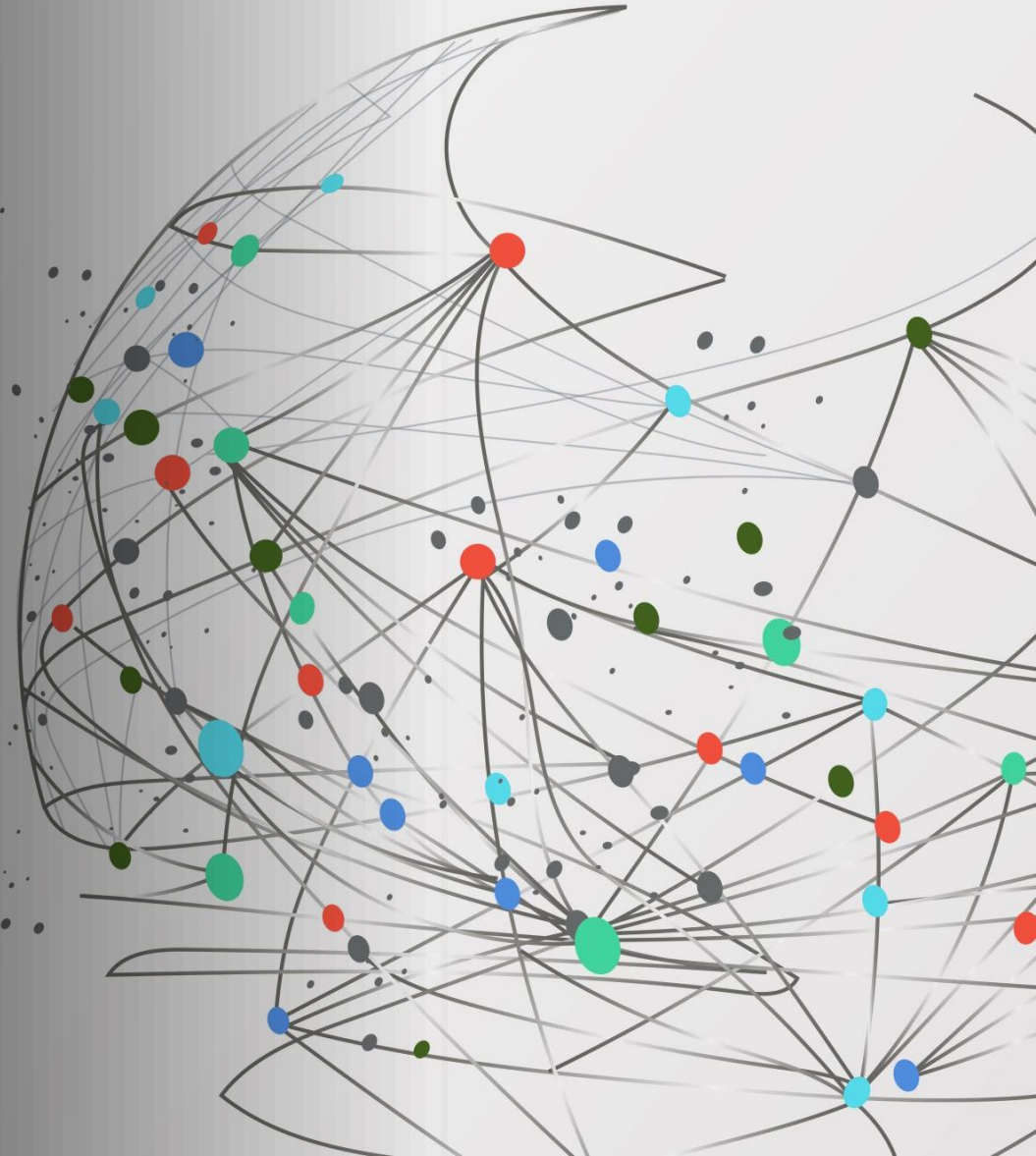


# Computer Programming

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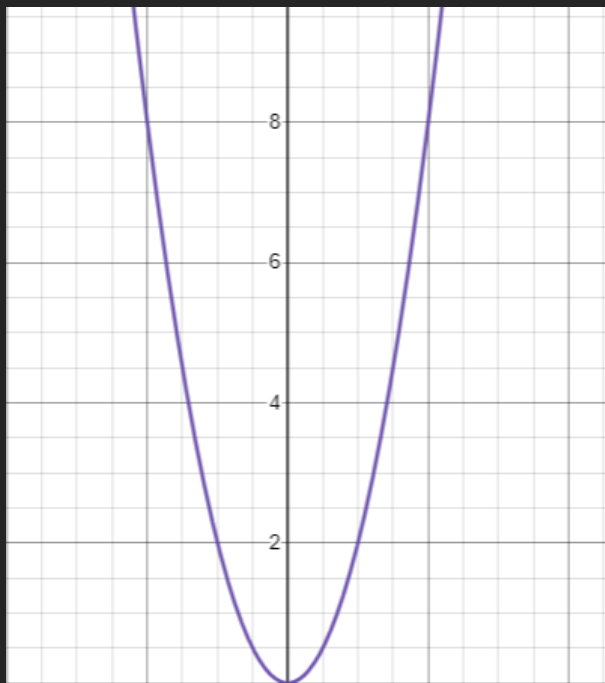
# Abstract

CAS (Computer Algebra Systems) is a software that will give you the answers to most mathematic problems from addition and subtraction to integration. It helps the student see their mistakes, thus, making the student avoid that same mistake and them learning as a result of that.

# Desmos



2x<sup>2</sup>



desmos


Desmos main function is the graphing calculator, however it is more than just a calculator, it is also a learning tool for classrooms. The Desmos curriculum is targeted for grades 6-8 so it probably won't be too difficult, but it can potentially be good for teaching young students. The graphing calculator is helpful when it comes to graphing. The calculator is not bad itself; it is still able to solve problems like integration. One of the downsides is the fact that the integration can only be used if it has upward and downward bounds. Other than that, there is not much Desmos can offer when it comes to solving different kinds of problems.

## The Desmos 6-8 Math Curriculum is here!

Brought to you by the team that created the Desmos calculators and activities. Now available for purchase by qualifying schools and districts.

[Request More Information](#)

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∫<sub>0</sub><sup>2</sup> 2x<sup>2</sup> dx

=  $\frac{16}{3}$

Trig	Stats	Dist	Misc
join	sort	shuffle	
lcm	gcd	mod	
ceil	floor	round	
sign	%	exp	
ln	$\sqrt[n]{\quad}$	polygon	
log	$\log_a$	$\frac{d}{dx}$	
∫	∑	∏	

Symbolab can do many different types of problems like Algebra, Calculus, and even Chemistry. It shows steps on most problems that are typed in, so it won't be confusing how the program got to the answer, however, it doesn't show the entire steps, Symbolab requires a subscription to be able to access the entire steps. There are times when it won't give the steps because it is too complex but is also doesn't give the answer. For example,  $\int_0^1 \frac{1}{\sqrt{x(4+x^2)}} dx$  can not be solved using Symbolab. It is possible to signup for free to get additional benefits, but it isn't anything major. The subscription though does give useful features like giving the entire steps and personalized practice problems so for remote learners, this may be helpful for them to get more practice doing problems. Still even after all the positive features, I don't think this should be used to learn an entire unit.

$\int 2x^2 dx = \frac{2x^3}{3} + C$

Steps

$\int 2x^2 dx$

Take the constant out:  $\int a \cdot f(x) dx = a \cdot \int f(x) dx$

$= 2 \cdot \int x^2 dx$

Apply the Power Rule:  $\int x^a dx = \frac{x^{a+1}}{a+1}, a \neq -1$

$= 2 \cdot \frac{x^{2+1}}{2+1}$

Simplify  $2 \cdot \frac{x^{2+1}}{2+1}$ :  $\frac{2x^3}{3}$

$= \frac{2x^3}{3}$

Add a constant to the solution ⓘ

$= \frac{2x^3}{3} + C$

[click here to practice integral power rule »](#)

$\int_0^{\infty} \frac{1}{\sqrt{x(4+x^2)}} dx$





Examples »

**No Steps:** Steps are currently not supported for this problem

## 2. SUBSCRIBE TO GET MUCH MORE!

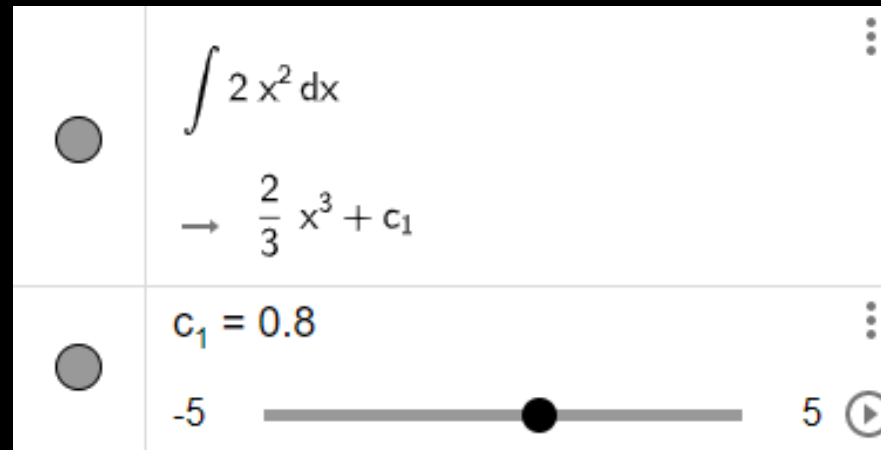
- ✓ Full access to solution steps
- ✓ Web & Mobile subscription
- ✓ Notebook (Unlimited storage)
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- ✓ No ads

# GeoGebra

-  Graphing
-  3D Calculator
-  Geometry
-  CAS


GeoGebra is another calculator that is like Desmos because it has a graph that seems to be the main function of GeoGebra. It has other features that is better used for geometry, algebra, etc. but the most important is the CAS calculator. It really isn't too different from Desmos, they both don't focus too much on the calculator but rather focus on the graphing aspect. Like Desmos, there is a curriculum for grades 6-8. One minor flaw when it comes to adjusting the  $C_1$  is how unresponsive it is. The graph doesn't move when the slider is being moved. Double clicking the graph does fix the problem, it is just a minor annoyance.

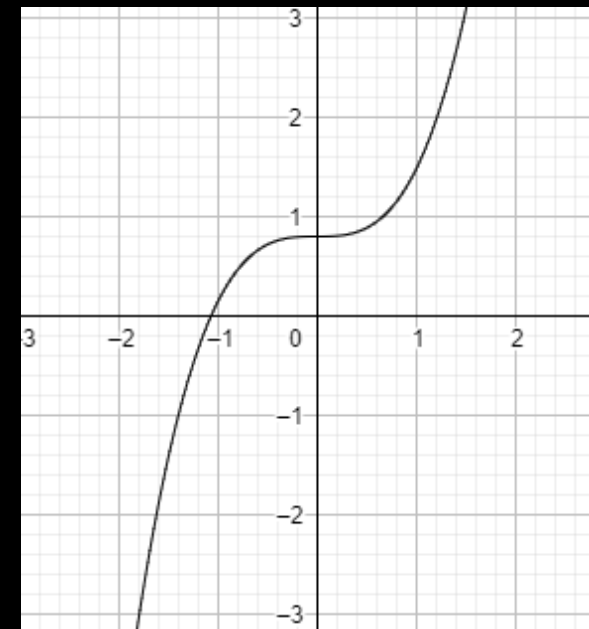
# GeoGebra



$\int 2x^2 dx$   
 $\rightarrow \frac{2}{3}x^3 + c_1$

$c_1 = 0.8$

-5  5



# Conclusion

The three CAS calculator that were shown are amazing software that is useful. The most useful on in my opinion is Symbolab simply because it allows the user to do many different types of equations and problems without having to sign up. Desmos and GeoGebra are more graphing calculator rather than an all-around calculator like Symbolab.

# Work Cited

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