

Math and physics concept maps

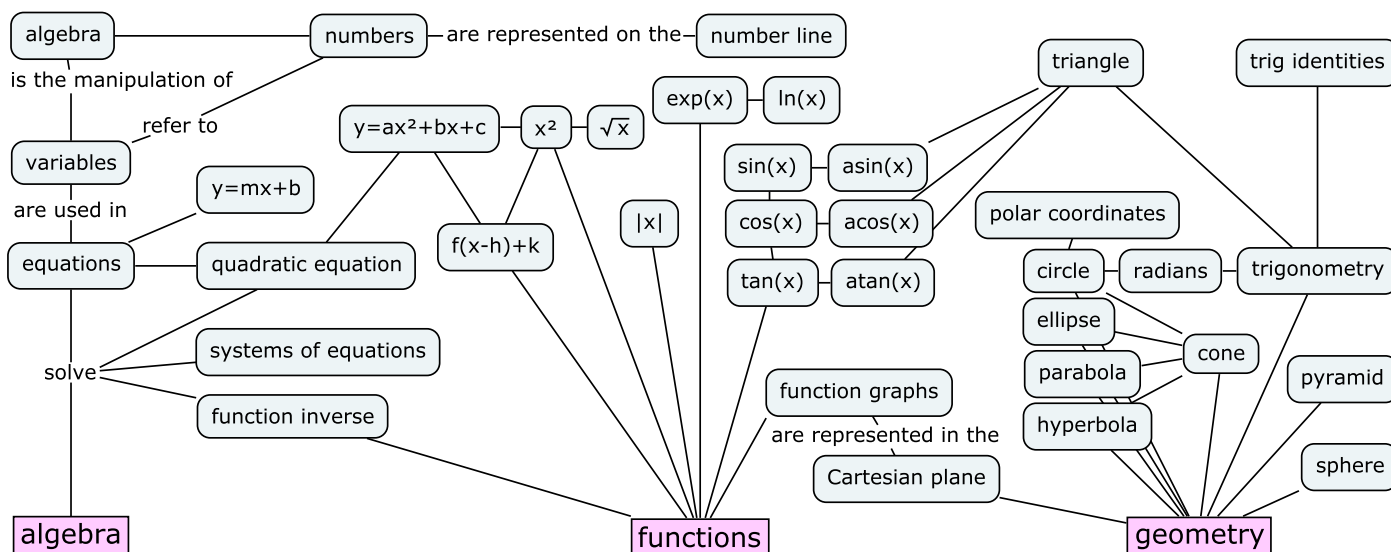


Figure 1: The high school mathematical prerequisites you need to review before studying mechanics and calculus include: learning how to solve equations, using functions to model real-world situations, and knowing the fundamental ideas of geometry.

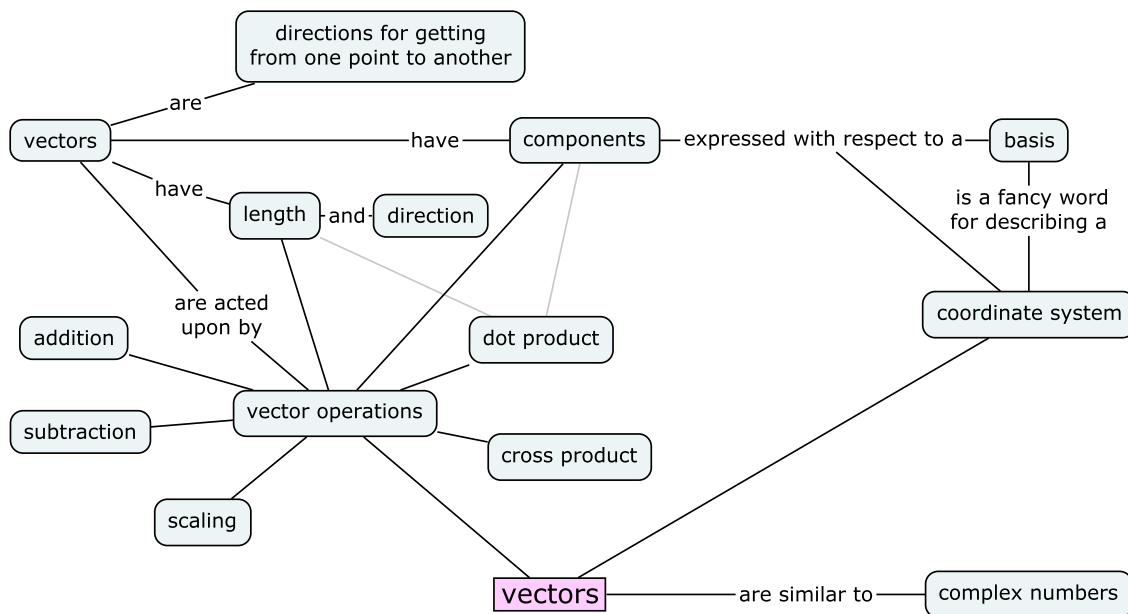


Figure 2: This figure illustrates some important concepts related to vectors. We need vectors in order to describe physical quantities like forces, velocities, and accelerations. Vectors are also used in computer graphics, probability theory, machine learning, and many fields of science.

You can annotate the concept maps with your current knowledge of each concept to keep track of your progress. Add a single dot (●) next to all concepts you've heard of, two dots (●●) next to concepts you think you know, and three dots (●●●) next to concepts you've used in exercises and problems. If you collect some dots every week, you'll be able to move through the material in no time at all.

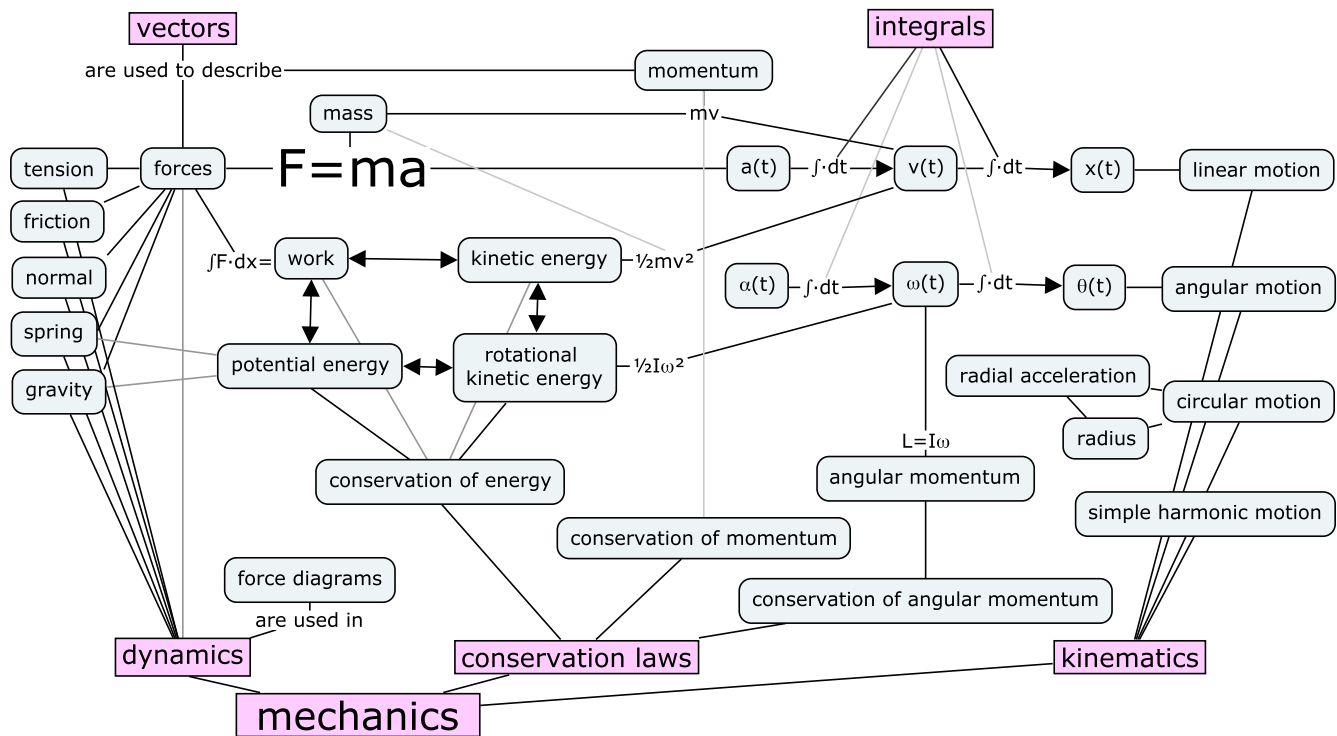


Figure 3: The concepts of mechanics. Forces are the cause of motion. We can also analyze the motion of objects in terms of the concepts of energy and momentum. If you understand the connections between all of the above concepts, you understand mechanics.

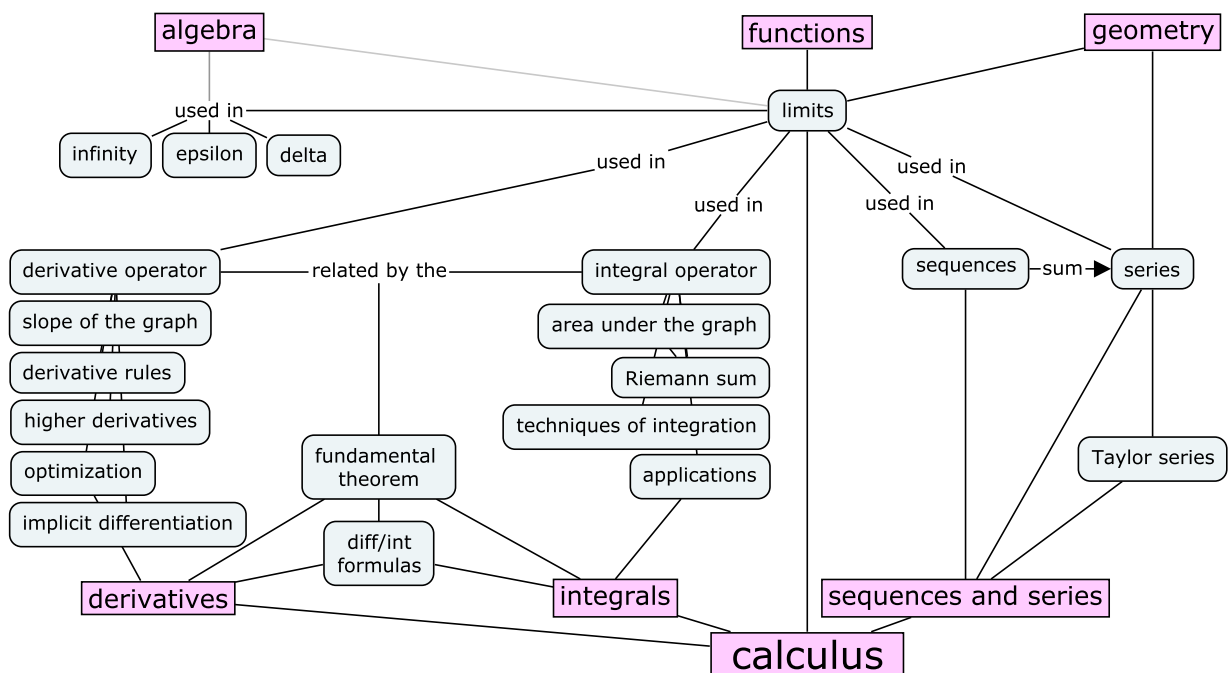


Figure 4: The main topics in calculus are limits, derivatives, integrals, sequences, and series. Understanding these concepts and relations is essential for learning science and engineering.

To learn more about these topics, check out the **No Bullshit Guide to Math and Physics** by Ivan Savov (Minireference Publishing, v5.4 2020, ISBN 0992001005) available in print from lulu [lulu](https://lulu.com) bit.ly/noBSmathphys-sc or amazon amazon.com/dp/0992001005, and as a digital download from gumroad gum.co/noBSmathphys. Visit minireference.com for more info and resources.