

Math in Programming

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Introduction

Depending on what type of programming you do, math will either be one of the most important subjects, or one of the least important subjects. The math you use can range from a simple addition, to a complex algorithm.

I believe that what's more important than the formulas learned from math are the concepts you learn from math that can be applied to programming. Concepts such as abstraction, understanding variables, form versus function, etc.

The Beauty in Simplicity

The best thing about programming at a beginner - intermediate level, is that you only need to know basic mathematics and concepts. Those being:

Addition, subtraction, division, multiplication, modulus, even/odd modulus test, getting the percentage of a number, understanding negatives, understanding order of operations, understanding a Cartesian coordinate system, understand Pythagorean theorem, and understand decimal, binary, and hexadecimal numbering systems.

Example of Math in Programming

Let's say there are two rectangular images on your web page, and you want to figure out their area in pixels and the distance between the images based on the centre of each image.

To figure out the area of the images, you would use geometry: $l \times w = A$

To figure out the distance between the images, you would use Pythagorean Theorem: $\text{sqrt}((x1 - x2)^2 + (y1 - y2)^2)$

Web Developer Career

Starting salary: \$70000

Education: Bachelor's degree in computer science related fields

Tasks: Writing well designed and efficient Javascript code, creating website layout / user interfaces using HTML / CSS, integrating data from various back-end services and databases