Distance formula

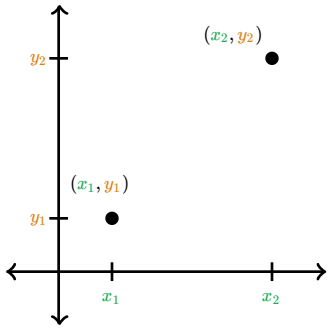
The distance between the points (x_1, y_1) and (x_2, y_2) is given by the following formula:

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

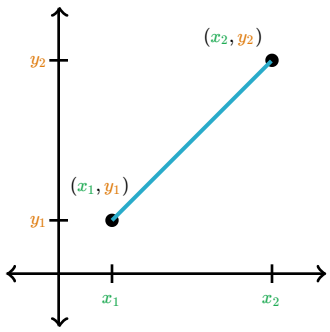
In this article, we're going to derive this formula!

Deriving the distance formula

Let's start by plotting the points (x_1, y_1) and (x_2, y_2).



The length of the segment between the two points is the distance between them:



We want to find the distance. If we draw a right triangle, we'll be able to use the Pythagorean theorem!

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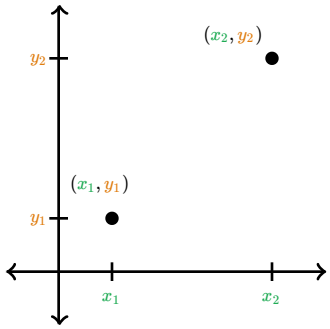

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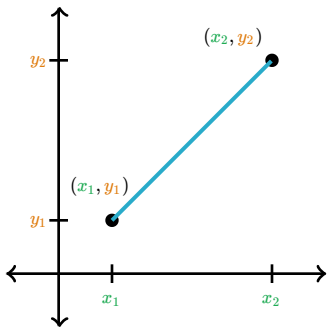

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