
Contents

Introduction to 3D Space	1
Example	1
Example 1	2

Introduction to 3D Space

We can associate a point “P” with 3 coordinates $(X_{\{o\}}, Y_{\{o\}}, Z_{\{o\}})$ and is unique with such coordinates.

Example

$$B \rightarrow (x_o, y_o)$$

$$C \rightarrow (x_1, y_1)$$

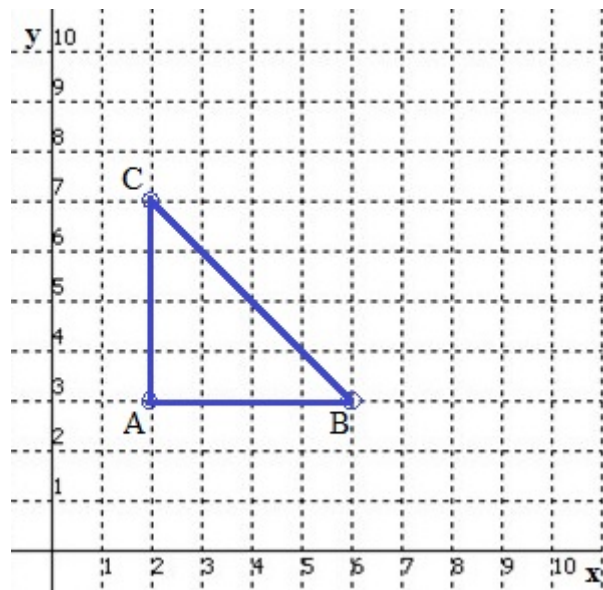


Figure 1: Two Dimension Overview

$_ \}$

- By the Pythagorean Theorem:

$$|BC| = \sqrt{(x_1 - x_o)^2 + (y_1 - y_o)^2}$$

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- Our distance formula is derived from the Pythagorean Theorem
 - The distance from the origin will be associated in the coordinates

Example 1

$$P(-1, 0, 5)$$

$$\begin{cases} x = -1 \\ y = 0 \\ z = 5 \end{cases}$$