



James Madison
HIGH SCHOOL

Distance Between Two Points On The Coordinate Plane



James Madison **Example 1**
HIGH SCHOOL

Determine the distance between Point A (2, 3) and Point B (4, -3).

Let (2, 3) be (x_1, y_1) and (4, -3) be (x_2, y_2) .

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

$$d = \sqrt{(4 - 2)^2 + (-3 - 3)^2}$$

$$d = \sqrt{(2)^2 + (-6)^2}$$

$$d = \sqrt{4 + 36}$$

$$d = \sqrt{40} = 2\sqrt{10}$$



James Madison **Example 2**
HIGH SCHOOL

On the coordinate plane, Mario is located at (-2, 1) and Luigi is located at (1, 5). How far apart are they?

Let (-2, 1) be (x_1, y_1) and (1, 5) be (x_2, y_2) .

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

$$d = \sqrt{(1 - (-2))^2 + (5 - 1)^2}$$

$$d = \sqrt{(3)^2 + (4)^2}$$

$$d = \sqrt{9 + 16}$$

$$d = \sqrt{25} = 5 \Rightarrow \text{They are 5 units apart.}$$