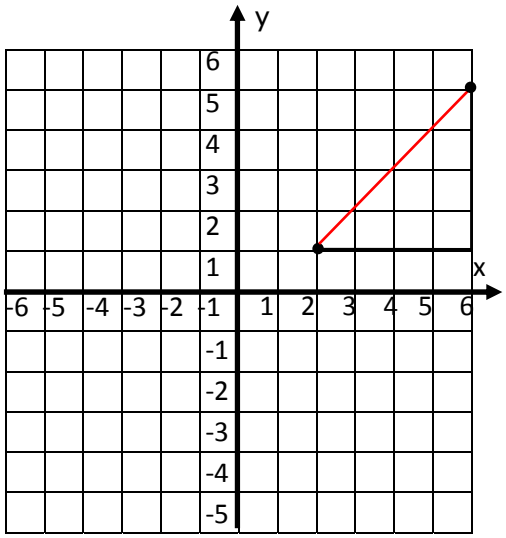
Name _____ Date _____

# Calculating Distance in the Complex Plane - Step-by-Step Lesson

What is the distance between (2 +1i) and (6 + 5i) on the complex plane?

**Explanation:**




Step 1) Graph the points and connect them with a line, shown above. The x-axis represents the real numbers and the y-axis represents the imaginary numbers. For example:

(2 + 1i) translates to the rectangular coordinates (2, 1)

2 (real number) = x  1i (imaginary number) = y

Step 2) Use the Pythagorean theorem, count the columns and find the length of two points - the imaginary number and the real number. Calculate distance in the complex plane. It would take 4 moves down and 4 moves right to create a triangle.

Step 3) $\sqrt{4^2+4^2}$ =5.65 (Solve the Pythagorean theorem)

The distance is 5.65.