

Warm-Up Notes

MAT 100: ELEMENTARY ALGEBRA

Fall 2026

SECTION 4.1 USE THE RECTANGULAR COORDINATE SYSTEM

Install — 10 minute lesson

Objectives of this Section

- Plot points in a rectangular coordinate system
- Verify solutions to an equation in two variables
- Complete a table of solutions to a linear equation
- Find solutions to a linear equation in two variables

Skills

Introduced in this section:

- **LIN.PQ** — Plotting Points and Quadrants
- **NUM.EV** — Evaluating Expressions

Lesson

A point on a flat grid can be pinned down with just two numbers, written in a fixed order: left-right first, then up-down. Once you know the sign of each number, you already know which of the four regions the point lives in — before you ever draw a dot. In this section you'll read, plot, and check these ordered pairs on the rectangular coordinate system.

I do

Watch. Is the point $(0, 8)$ on the x-axis or the y-axis? How do you know?

We do

Together. Find three ordered pairs (x, y) that satisfy the linear equation $2x + 4y = 8$.

You do

Your turn. Plot the following points on a rectangular coordinate plane and indicate the quadrant for each point. (a) $(-1, 1)$ (b) $(-2, -1)$ (c) $(2, 1)$ (d) $(1, -4)$ (e) $(3, \frac{7}{2})$

Your turn. Plot the given points on a rectangular coordinate system and indicate the quadrant in which each point lies. (a) $(-4, 2)$ (b) $(-1, -2)$ (c) $(3, -5)$ (d) $(-3, 5)$ (e) $(\frac{5}{3}, 2)$

Practice

1. Find three ordered pairs (x, y) that satisfy the linear equation $4x - 3y = 12$.
2. Find three ordered pairs (x, y) that satisfy the linear equation $4x - y = 8$.
3. Find three ordered pairs (x, y) that satisfy the linear equation $3x + 2y = 6$.
4. How do you determine if an ordered pair is a solution to a given equation?