Warm-Up Notes

MAT 100: Elementary Algebra

Fall 2026

Section 4.3 Graph with Intercepts

Install — 10 minute lesson

Objectives of this Section

- Identify the x - and y - intercepts on a graph
- Find the x - and y - intercepts from an equation of a line
- Graph a line using the intercepts

Skills

Introduced in this section:

- **LIN.IC** — Finding Intercepts

Also practiced: LIN.GL (Graphing a Line), WRD.NM (Naming the model).

Lesson

A line crosses the x-axis exactly once and the y-axis exactly once (unless it's vertical or horizontal). Those two crossing points are called the *intercepts*, and they are the fastest points to find from an equation, because one coordinate is already zero before you do any work.

I do

Watch. Find the x- and y-intercepts of the line defined by the equation $y = 3x$.

We do

Together. Graph the line using intercepts. The equation is $2x + 4y = 12$.

You do

Your turn. Which method is more efficient for graphing $4x + y = -4$: plotting points or using intercepts? Provide a brief justification.

Your turn. Graph the line using intercepts. The equation is $y = -4x$.

Practice

1. Find the x- and y-intercepts of the line defined by the equation y = (1/4)x - 1.

2. Find the x- and y-intercepts of the line defined by the equation 3x + y = 6.

3. Find the x- and y-intercepts of the line defined by the equation x - y = 5.

4. Find the x- and y-intercepts of the line defined by the equation x + y = -5.