Section 7.2 Linear Functions and Their Graphs

# All equations of the form $Ax+By=C$ are straight lines when graphed, as long as *A* and *B* are not both zero. Such equations are called linear equations in two variables. We can quickly obtain the graph for equations in this form when none of *A, B,* or *C* is zero by finding the points where the graph intersects the x-axis and the y-axis. The x-coordinate of the point where the graph intersects the x-axis is called the x-intercept. The y-coordinate of the point where the graph intersects the y-axis is called the y-intercept.

# Objective 1: Using intercepts to graph a linear equation

**Algebraically finding x-intercepts and y-intercepts given a linear equation in two variables**

**Finding the x-intercept:** Set y equal to 0 and solve the equation for x.

**Finding the y-intercept**: Set x equal to 0 and solve the equation for y.

An equation of the form $Ax+By=C$can be graphed by finding the x- and y- intercepts, plotting the intercepts, and drawing a straight line through these points.

# Objective 2: Graph horizontal or vertical lines

All horizontal lines have equations of the form $y=b$.

All vertical lines have equations of the form $x=a$.



