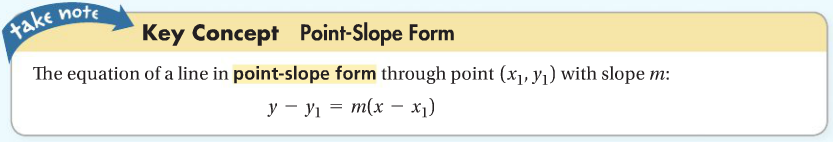
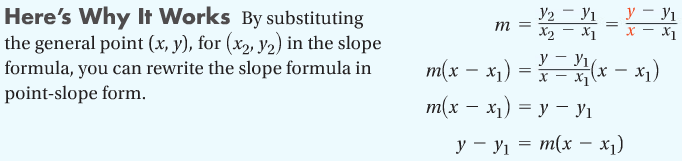
**Section 2–4A: More Linear Equations**

Given the slope and *y*-intercept, you can write the equation of a line in slope-intercept form. You can also write the equation of a line in **point-slope form**.





It is very easy to write any linear equation in point-slope form, because it only requires two items from the line: **one point from the line and the slope of the line**.

**Example 1: Writing an Equation Given a Point and the Slope**

A line passes through with slope . What is an equation of the line?

**Question: Is slope-intercept or point-slope form more helpful for writing this equation?**

Since the slope and a point (not the *y*-intercept) are given, point-slope form is more helpful.

Substitute and .

Simplify.

**Example 2: Writing an Equation Given Two Points**

A line passes through and . What is an equation of the line in point-slope form?

Let and .

Substitute into the slope formula and simplify:

Substitute into point slope form:

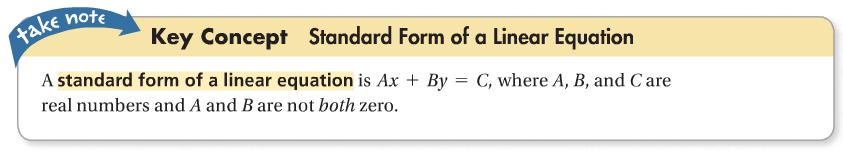
**Question: Does it matter which point you substitute into point-slope form?**

No, you can choose **either point** as !!

Another form of the equation of a line is **standard form**, in which the sum of the *x* and *y* terms are set equal to a constant. When possible, **you should always write the coefficients of *x* and *y* and the constant term as integers**.

**Question: How can you rewrite the equation using only integer values?**

Multiply each side of the equation by the least common denominator of all fraction coefficients.

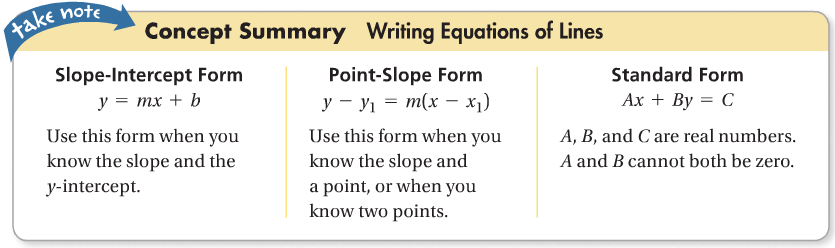


**Example 3: Writing an Equation in Standard Form**

What is an equation of the line in standard form? Use integer coefficients.

Subtract from each side.

Multiply each side by 4

****

You can graph an equation in standard form quickly by determining the *x*- and *y*-intercepts and then drawing the line through them.

**Problem 4: Graphing an Equation Using Intercepts**

What are the intercepts of ? Graph the equation.

