Algebra 1 4.1

Write and graph linear equations in slope-intercept form.

Model data with equations in slope-intercept form

linear

slope

y-intercept

y=mx+b

constant function (horizontal)

bicycles and constant slope

Matching activ. (if time)

Whiteboards

Whiteboards

**3.** slope: $\frac{3}{4}$, $y$-intercept: $-1$

**4.** slope: $-\frac{5}{7}$, $y$-intercept: $-\frac{2}{3}$

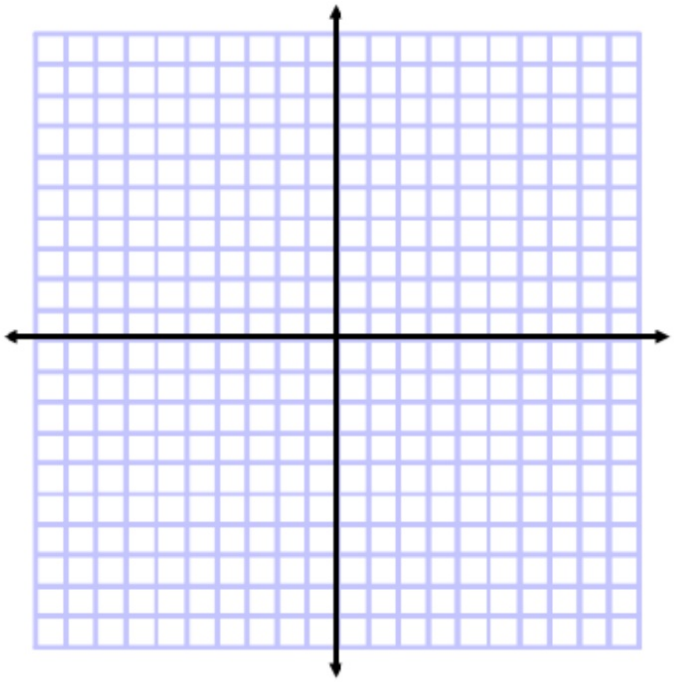
Does it say y= ?  (not yet)

## GuidedPractice

**Graph each equation.**

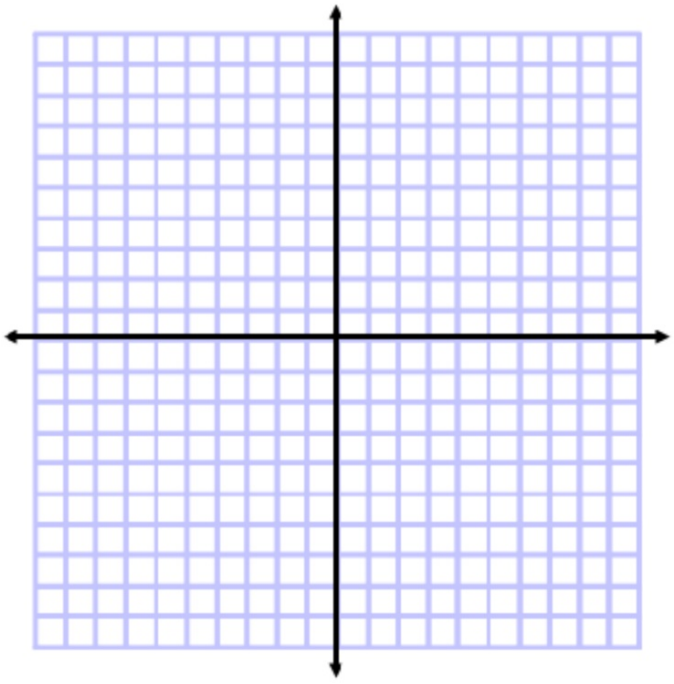
**2A.** $3x - 4y = 12$

**2B.** $-2x + 5y = 10$



**5.** $-4x + y = 2$

**6.** $2x + y = -6$



*Special cases:*

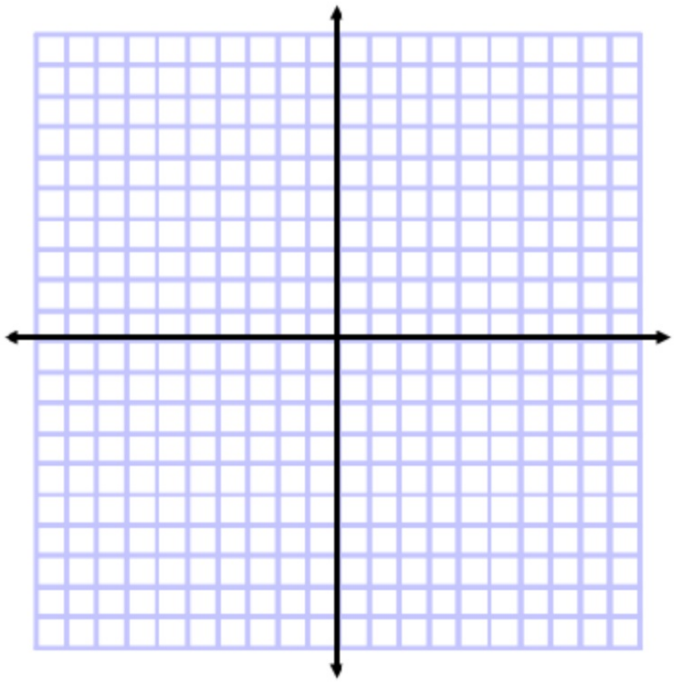
*vertical*

**GuidedPractice**

**Graph each equation.**

**3A.** $y = 5$

x = 2
y = -4
x = -1



## Real-World Example 5 Write and Graph a Linear Equation

Where do they start (B)? What is the rate of change (m)?

**SPORTS** Use the information at the left about high school sports.

a. Write a linear equation to find the number of girls in high school sports after 1997.

**Real-World Link**

In 1997, about 2.6 million girls competed in high school sports. The number of girls competing in high school sports has increased by an average of 0.06 million per year since 1997.

**Source:** National Federation of High School Associations

b. ~~Graph the equation.~~

$0.06x + 2.6$

$0.06(20) + 2.6$

c. Estimate the number of girls competing in 2017.

$1.2 + 2.6$

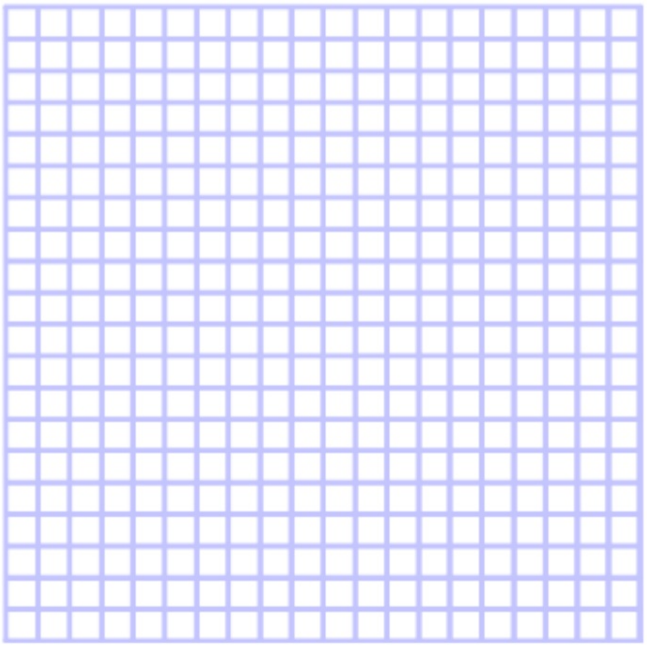
3.8 million

## GuidedPractice

**5. FUNDRAISERS** The band boosters are selling sandwiches for $5 each. They bought $1160 in ingredients.

**A.** Write an equation for the profit $P$ made on $n$ sandwiches.

**B.** Graph the equation.

**C.** Find the total profit if 1400 sandwiches are sold.

When do they make a profit?