Name_____

Chapter 2 Graphing and Writing Linear Equations

Dear Family,

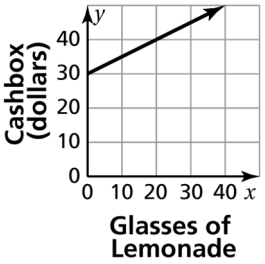
Running a lemonade stand is a popular way for children to earn money. Suppose your child is running a lemonade stand to earn money for a new bike. You have provided the ingredients at no cost, so any sales are all profit.

The cashbox starts with $30 for making change. Your child can figure out how much money should be in the cashbox with a linear equation.

Amount in cashbox = (Initial amount) + (Glass price) × (Glasses sold)

$$y = 30 + 0.5x$$

In a graph of the equation, the line slopes upward because the amount of money in the cash box is increasing. The slope is positive and equal to the unit price: $0.50 per glass of lemonade, or 0.5.



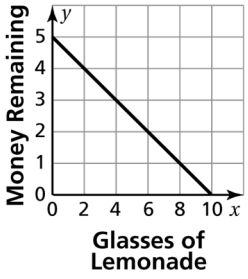
The y-intercept (0, 30) corresponds to the starting point (no sales) and the amount of money the cashbox starts with, $30.

Suppose a neighbor and her children visit the lemonade stand. You neighbor has $5 to spend on glasses of lemonade. The amount of money remaining depends on how many glasses of lemonade she purchases.

Amount remaining = (Initial amount) – (Glass price) × (Glasses bought)

$$y = 5 - 0.5x$$

In a graph of the equation, the line slopes downward because the money left to spend is decreasing. The slope is negative and equal to the cost of one glass of lemonade: –0.5. The intercepts (0, 5) and (10, 0) correspond to the starting point (no glasses bought and $5) and the possible ending point (10 glasses bought and no money remaining).



Enjoy your lemonade stand work!

Graphing and Writing Linear Equations (continued)

Lesson	Learning Target	Success Criteria
2.1 Graphing Linear Equations	Graph linear equations.	• I can create a table of values and write ordered pairs given a linear equation. • I can plot ordered pairs to create a graph of a linear equation. • I can use a graph of a linear equation to solve a real-life problem.
2.2 Slope of a Line	Find and interpret the slope of a line.	• I can explain the meaning of slope. • I can find the slope of a line. • I can interpret the slope of a line in a real-life problem.
2.3 Graphing Proportional Relationships	Graph proportional relationships.	• I can graph an equation that represents a proportional relationship. • I can write an equation that represents a proportional relationship. • I can use graphs to compare proportional relationships.
2.4 Graphing Linear Equations in Slope-Intercept Form	Graph linear equations in slope-intercept form.	• I can identify the slope and y-intercept of a line given an equation. • I can rewrite a linear equation in slope-intercept form. • I can use the slope and y-intercept to graph linear equations.
2.5 Graphing Linear Equations in Standard Form	Graph linear equations in standard form.	• I can rewrite the standard form of a linear equation in slope-intercept form. • I can find intercepts of linear equations written in standard form. • I can use intercepts to graph linear equations.
2.6 Writing Equations in Slope-Intercept Form	Write equations of lines in slope-intercept form.	• I can find the slope and the y-intercept of a line. • I can use the slope and the y-intercept to write an equation of a line. • I can write equations in slope-intercept form to solve real-life problems.
2.7 Writing Equations in Point-Slope Form	Write equations of lines in point-slope form.	• I can use a point on a line and the slope to write an equation of the line. • I can use any two points to write an equation of a line. • I can write equations in point-slope form to solve real-life problems.