Linear Equations

5611

Introduction

In this activity, students will explore solving linear equations algebraically, numerically, and graphically.

Grades 6-8

NCTM Algebra Standards

- Represent and analyze mathematical situations and structures using algebraic symbols
- Recognize and generate equivalent forms for simple algebraic expressions and solve linear equations

Files/Materials Needed

linear.act

1

a. Launch TI-Navigator™ on the computer and start the session.
b. Have each student log into NavNet on their calculator.

2

a. Load the activity settings file *linear.act*.
b. Using one of the equations below, instruct your students to enter the expression on the left side of the = sign in Y1 and the expression on the right side of the = sign in Y2.

$$1 - 4x = -15$$
$$-28 = 5x - 7x - 4$$
$$-3 - x = x - 11$$
$$2(4 - 3x) = 8$$
$$6(-3 - 4x) = 24 - 2(x - 1)$$

c. Instruct students to press **SEND** when ready to submit their graphs.
d. To demonstrate how to solve equations graphically, use your cursor to point to the intersection of the two lines and discuss what the corresponding *x*-value is.
e. To demonstrate how to solve equations numerically, click on the **Equation-Graph** tab in the Activity Center and select Y1 in the first column and Y2 in the second column. Scroll until the expressions have the same *y*-value. Look at the corresponding *x*-value to find the solution.

f. If there are submissions that have common errors, you may pause the activity, and discuss "what a student who submitted these equations might have been thinking."
g. Stop the activity and discuss with your class to check for understanding.

3

a. Have students log out of NavNet and use their calculators to enter the expressions into Y1 and Y2 and use the table and graph functions to find the solution.
b. Use **Screen Capture** to check students' understanding.

4

a. Have students log back into NavNet.
b. Use **Quick Poll** (with *Open Response*). For each equation in step 2b, have students submit their solution.

EXTENSION

5

Challenge students to write a real-life situation that can be solved by writing and solving an equation. Then have the class write and solve the equation.