

Assignment

Write

Explain how you know when an equation has no solution and when it has infinite solutions.

Remember

To solve an equation, use the Properties of Equality to isolate the variable. A linear equation can have one solution, no solution, or infinite solutions.

Practice

1. Solve each equation. Write the properties that justify each step in the solution method.

a. $3x - 8 = -7x + 18$

b. $-2(4 - x) = 12x - 3$

c. $\frac{1}{2}(-10x + 4) = -4(-3 + 2x) + 8$

d. $\frac{(-2x - 4)}{5} + \frac{8}{5} = 3(x - 1)$

e. $\frac{4}{3}x - 2\left(9 - \frac{1}{3}x\right) = -\frac{7}{3}x + 9$

2. Determine whether each equation has one solution, no solution, or infinite solutions. Explain your reasoning.

a. $-2(x + 5) = -6x + 4(x - 2)$

b. $4(0.2x - 1.2) = -0.5x + 3.4$

c. $\frac{\left(\frac{1}{2}x - 7\right)}{2} = -3x + 4$

d. $2(x - 4) + x = 3(x - 2) - 2$

e. $3 - \frac{2}{5}x - \frac{12}{5} = \frac{10 - 2x}{5}$

f. $6(x - 1) + 21 = 6x + 15$

Stretch

Consider the equation $2x - 5(x - 1) = 50$.

a. Solve the equation for x .

b. Chen was asked to solve the inequality: $2x - 5(x - 1) < 50$. She gave an answer of $x < -15$.

Substitute in any value for x less than -15 to determine if Chen is correct. If not, determine the correct solution.

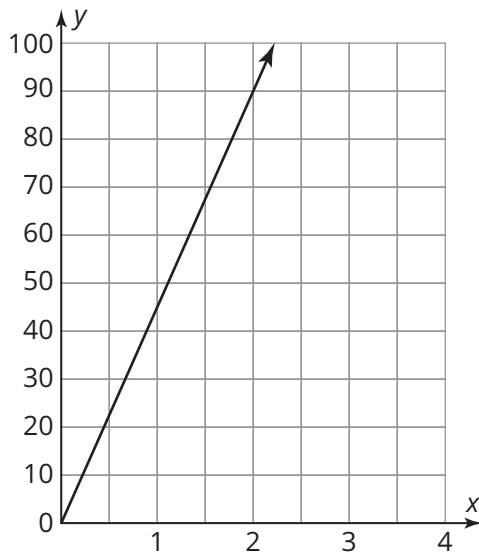
Review

1. Determine whether the table of values represents a linear function. If it does represent a linear function, write the function. If it does not represent a linear function, explain why.

x	$f(x)$
-2	4
-1	1
0	0
1	1

2. Nelson grows tomatoes and sells them at a nearby farmer's roadside stand. He sells them for \$2.50 each. The farmer charges him \$15 a day to use the stand. Write a linear function in factored form and general form that represents the amount of money, M , Nelson will make from selling x tomatoes.
3. Clean Green Landscapers uses a graph to show what they charge, and Sunshine Landscaper lists what they charge in a table.

Clean Green Landscapers



Sunshine Landscaper

0.5	\$25
1	\$50
1.5	\$75
2	\$100
2.5	\$125

- a. Each representation shows a functional relationship between quantities. Label the quantities and their units in the table and on the graph.
- b. Let $C(x)$ represent the function for Clean Green Landscapers, and let $S(x)$ represent the function for Sunshine Landscapers. Which function has a steeper slope? Explain how you know.
4. Evaluate the function $f(x) = 0.4x^2 - 3x - 8$ for the value $x = -2$.
5. The cost to install x number of central air conditioning units for a company is given by the function $C(x) = \frac{4000x + 1300}{3}$. Use the function to determine the cost to install 45 air conditioners.