NAME

Study Guide and Intervention

Graphing Linear Equations

ALL WORK ON LOOSELEAF!! Mr. C.

Identify Linear Equations A **linear equation** is an equation that can be written in the form Ax + By = C. This is called the **standard form** of a linear equation.

Standard Form of a Linear Equation

Ax + By = C, where $A \ge 0$, A and B are not both zero, and A, B, and C are integers whose GCF is 1.

Example 1 Determine whether y = 6 - 3xis a linear equation. If so, write the equation in standard form.

First rewrite the equation so both variables are on the same side of the equation.

$$y=6-3x$$
 Original equation $y+3x=6-3x+3x$ Add $3x$ to each side.

Original equation

3x + y = 6

Simplify.

The equation is now in standard form, with A = 3, B = 1 and C = 6. This is a linear equation.

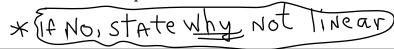
Example 2

Determine

whether 3xy + y = 4 + 2x is a linear equation. If so, write the equation in standard form.

Since the term 3xy has two variables, the equation cannot be written in the form Ax + By = C. Therefore, this is not a linear equation.

Exercises





Determine whether each equation is a linear equation. If so, write the equation in standard form.

1.
$$2x = 4y$$

2.
$$6 + y = 8$$

3.
$$4x - 2y = -1$$

4.
$$3xy + 8 = 4y$$

5.
$$3x - 4 = 12$$

6.
$$v = x^2 + 7$$

7.
$$y - 4x = 9$$

$$8.x + 8 = 0$$

9.
$$-2x + 3 = 4y$$

10.
$$2 + \frac{1}{2}x = y$$

11.
$$\frac{1}{4}y = 12 - 4x$$

12.
$$3xy - y = 8$$

13.
$$6x + 4y - 3 = 0$$

14.
$$yx - 2 = 8$$

15.
$$6a - 2b = 8 + b$$

16.
$$\frac{1}{4}x - 12y = 1$$

17.
$$3 + x + x^2 = 0$$

18.
$$x^2 = 2xy$$