

LESSON
5.7**Spreadsheet Activity:**
Linear Inequalities in Two Variables*For use before the lesson "Graph Linear Inequalities in Two Variables"***QUESTION** How can you use a spreadsheet to tell whether an ordered pair is a solution of a linear inequality in two variables?

A linear inequality in two variables, such as $y - 2x \leq -5$, is the result of replacing $=$ in a linear equation with $<$, \leq , $>$, or \geq . A solution of an inequality in two variables x and y is an ordered pair (x, y) that produces a true statement when the values of x and y are substituted into the inequality.

EXAMPLE Use a spreadsheet to tell whether an ordered pair is a solution of an inequality

Use a spreadsheet to tell whether each ordered pair is a solution of the inequality $y - 2x \leq -5$.

(0, 0) (5, -2) (9, 3) (-1, -7)

STEP 1 Enter data and formulas. Label columns x -coordinates, y -coordinates, and solution of inequality. Enter the x -coordinates in column A. Enter the y -coordinates in column B. Then enter the formula to tell whether the ordered pair is a solution of the inequality $y - 2x \leq -5$.

Data			
	A	B	C
1	x -coordinates	y -coordinates	Solution of inequality
2	0	0	$=B2-2*A2<=-5$
3	5	-2	$=B3-2*A3<=-5$
4	9	3	$=B4-2*A4<=-5$
5	-1	-7	$=B5-2*A5<=-5$

STEP 2 From column C, you can conclude that $(0, 0)$ is *not* a solution of $y - 2x \leq -5$. The ordered pairs $(5, -2)$, $(9, 3)$, and $(-1, -7)$ are solutions of $y - 2x \leq -5$.

Data			
	A	B	C
1	x -coordinates	y -coordinates	Solution of inequality
2	0	0	False
3	5	-2	True
4	9	3	True
5	-1	-7	True

PRACTICE Use a spreadsheet to tell whether each ordered pair is a solution of the inequality.

- $y - x < 4$; $(-1, 5)$, $(-3, 8)$, $(2, 3)$, $(-7, -10)$
- $2x + y \geq -3$; $(-8, 5)$, $(9, -2)$, $(12, 4)$, $(-1, -6)$
- $2y + 5x > 7$; $(12, -5)$, $(3, 11)$, $(-7, -4)$, $(-3, 2)$
- $-y + 4x \leq -2$; $(-2, -8)$, $(-7, 4)$, $(-1, 15)$, $(4, 12)$

LESSON
5.7**Spreadsheet Activity:**
Linear Inequalities in Two Variables *continued**For use before the lesson "Graph Linear Inequalities in Two Variables"***EXCEL**

Select cell A1.

x-coordinates **TAB** y-coordinates **TAB** Solution of inequality **ENTER**

Select cell A2.

0 **ENTER** 5 **ENTER** 9 **ENTER** -1 **ENTER**

Select cell B2.

0 **ENTER** -2 **ENTER** 3 **ENTER** -7 **ENTER**

Select cell C2.

= B2 - 2*A2 <= -5 **ENTER**Select cell C2. From the **Edit** menu, choose **Copy**.Select cells C3–C5. From the **Edit** menu, choose **Paste**.