

Warm Up

Thursday,
December 09,
2010

Solve each equation or inequality.

Graph the solution on a number line.

1. $2c + 7 = 1$

1. $c = -3$

2. $-12 \leq -6r$

2. $r \leq 2$

3. $3m + 8 > 5$

3. $m > -1$

EQ: What does the solution region to a system of linear inequalities represent?

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Unit 2	Systems of Linear Equations
Lesson 2	Systems of Linear Inequalities
Essential Question	What does the solution region to a system of linear inequalities represent?
Standards	M.ALGII.4.13
Objectives	
Vocabulary	

EQ: What does the solution region to a system of linear inequalities represent?

The logo features a stylized open book with a red outline, positioned to the left of the text 'Journal Topic'.

Journal Topic

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Unit 3: Lesson 4

What is a linear
inequality and how do you
graph one?

What we're learning today:

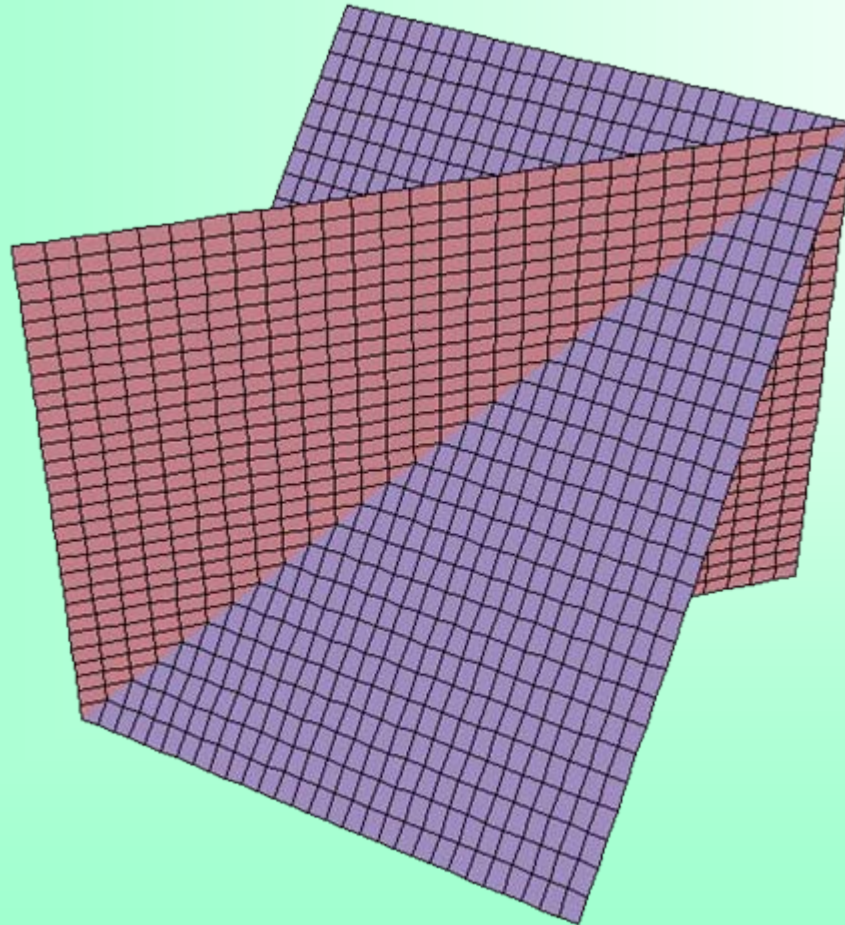
- How to find the solution to a system of linear inequalities

EQ: What does the solution region to a system of linear inequalities represent?



Discussion

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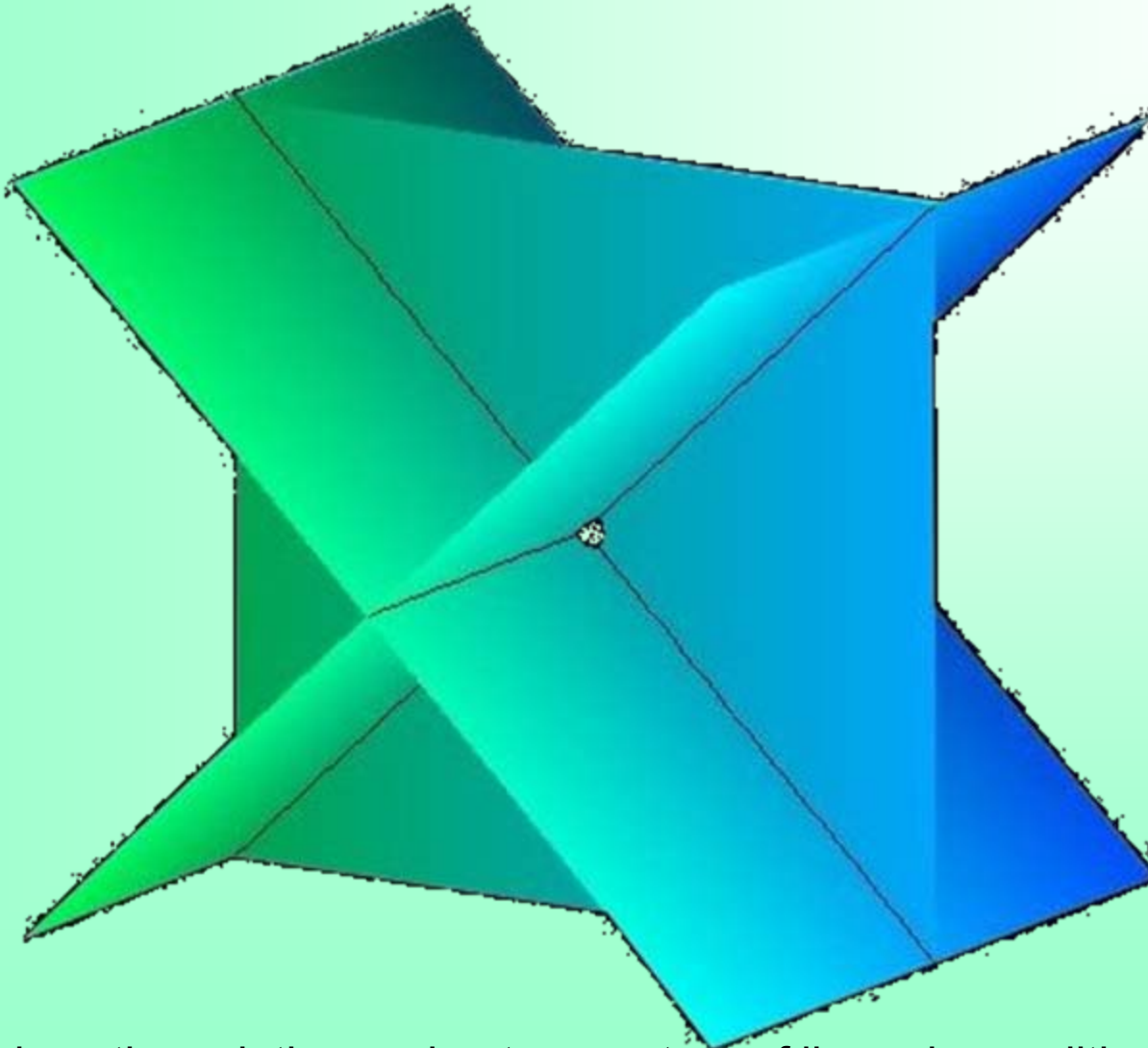


EQ: What does the solution region to a system of linear inequalities represent?



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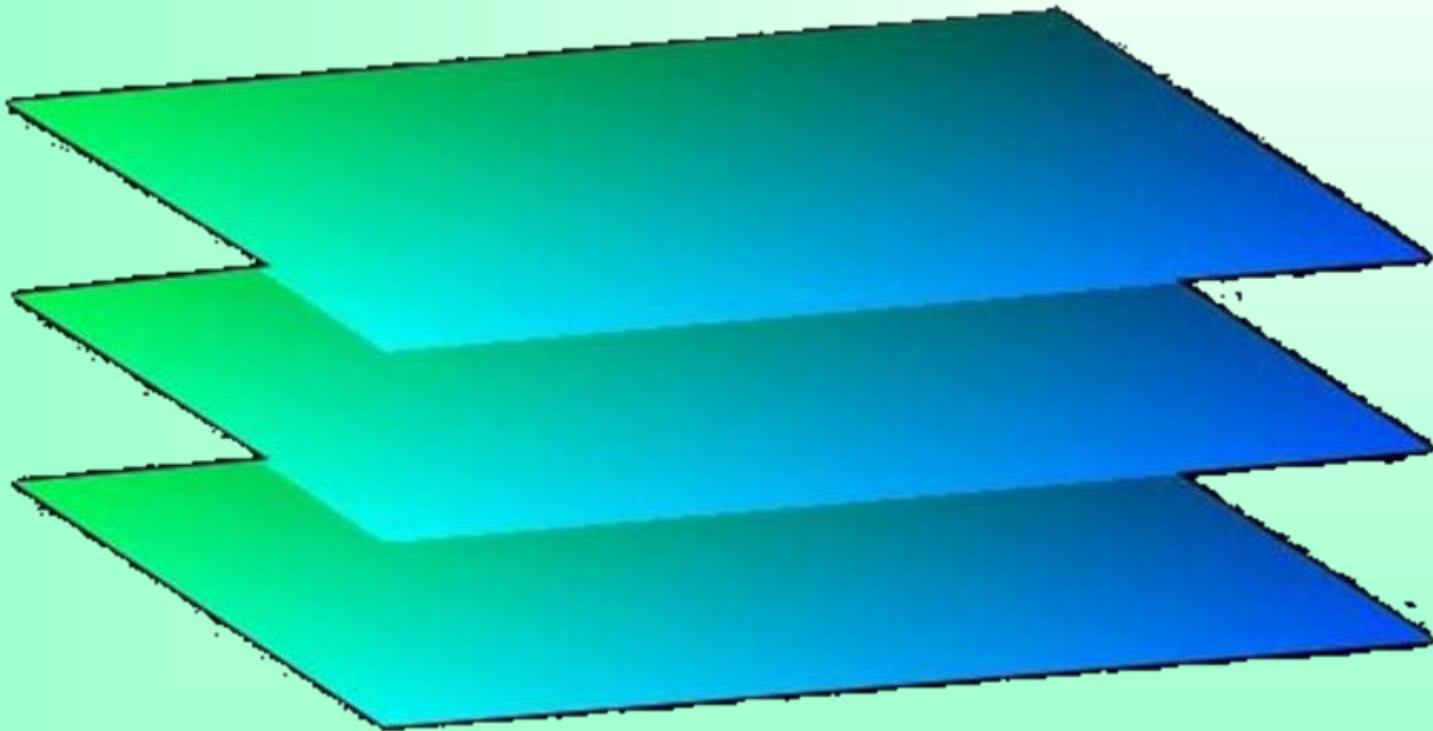


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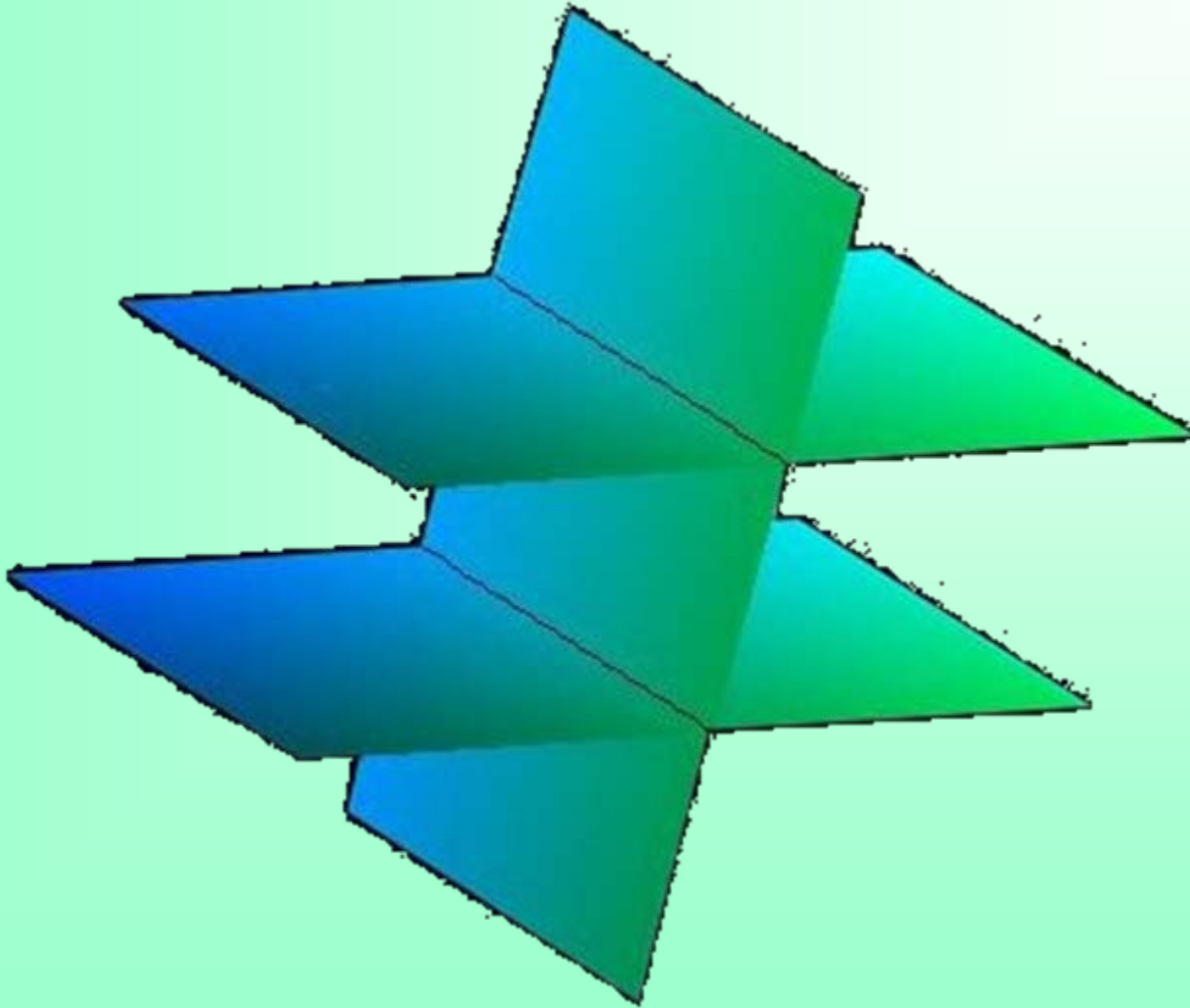


EQ: What does the solution region to a system of linear inequalities represent?



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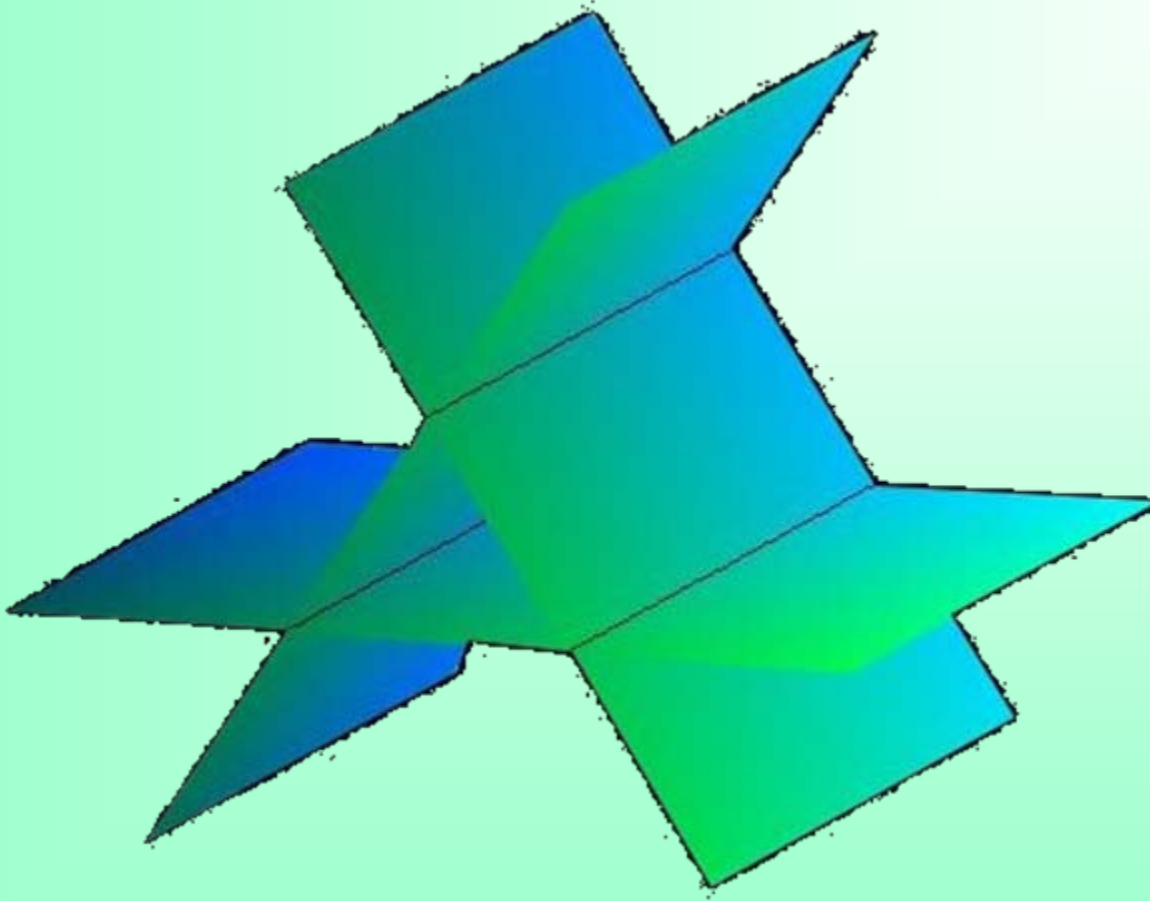


EQ: What does the solution region to a system of linear inequalities represent?



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EQ: What does the solution region to a system of linear inequalities represent?



Discussion

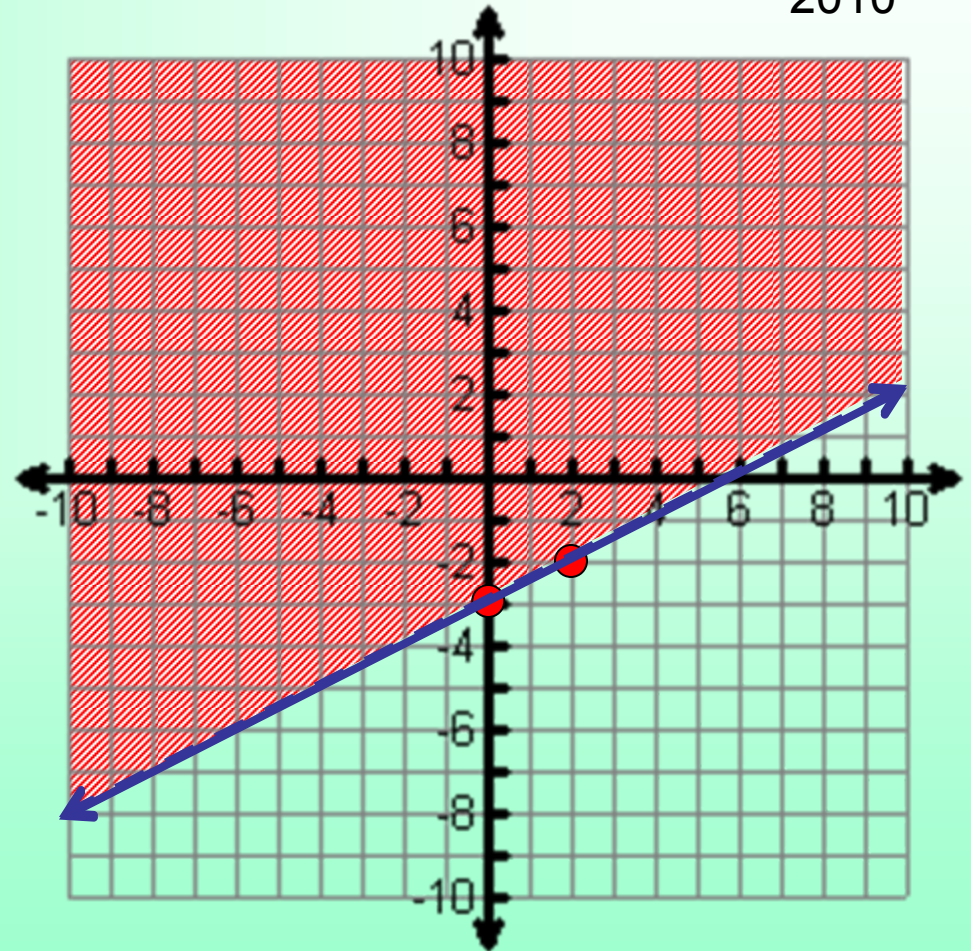
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$$y > \frac{1}{2}x - 3$$

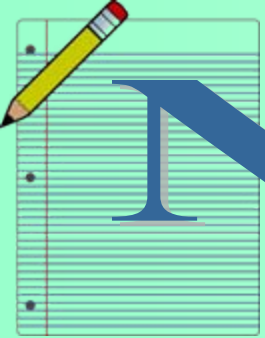
Is $(5, -8)$ a solution?

Is $(1, 3)$ a solution?

Is $(-4, -5)$ a solution?



EQ: What does the solution region to a system of linear inequalities represent?



Notes

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Graphing a Linear Inequality

- 1) Solve the inequality for y .
- 2) Graph the line using the slope and y -intercept. Use a solid line for \leq or \geq and a dashed line for $<$ or $>$.
- 3) Shade above the line for " $y > \dots$ " or " $y \geq \dots$ " and shade below for " $y < \dots$ " and " $y \leq \dots$ ". Use a test point if necessary to check for proper shading.

EQ: What does the solution region to a system of linear inequalities represent?



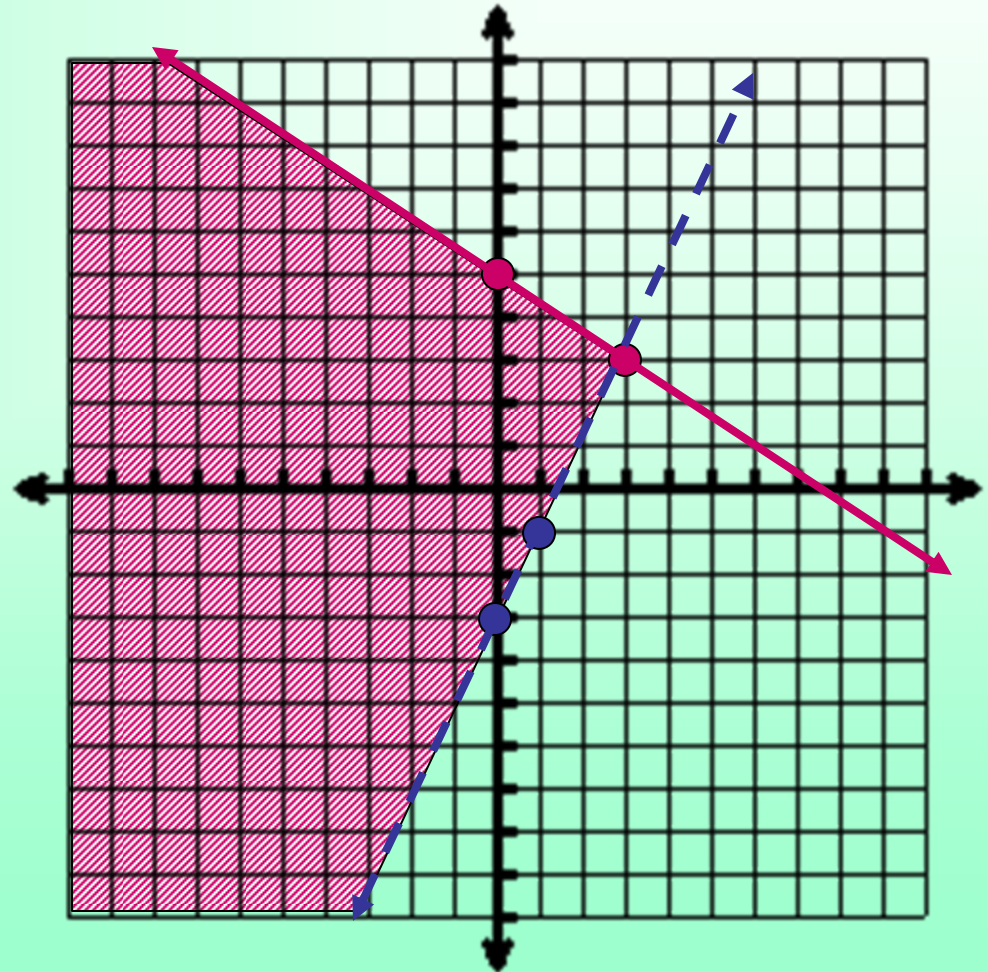
Discussion

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$$\begin{cases} y > 2x - 3 \\ y \leq -\frac{2}{3}x + 5 \end{cases}$$

Is $(2, 7)$ a solution?

Is $(5, 3)$ a solution?



EQ: What does the solution region to a system of linear inequalities represent?



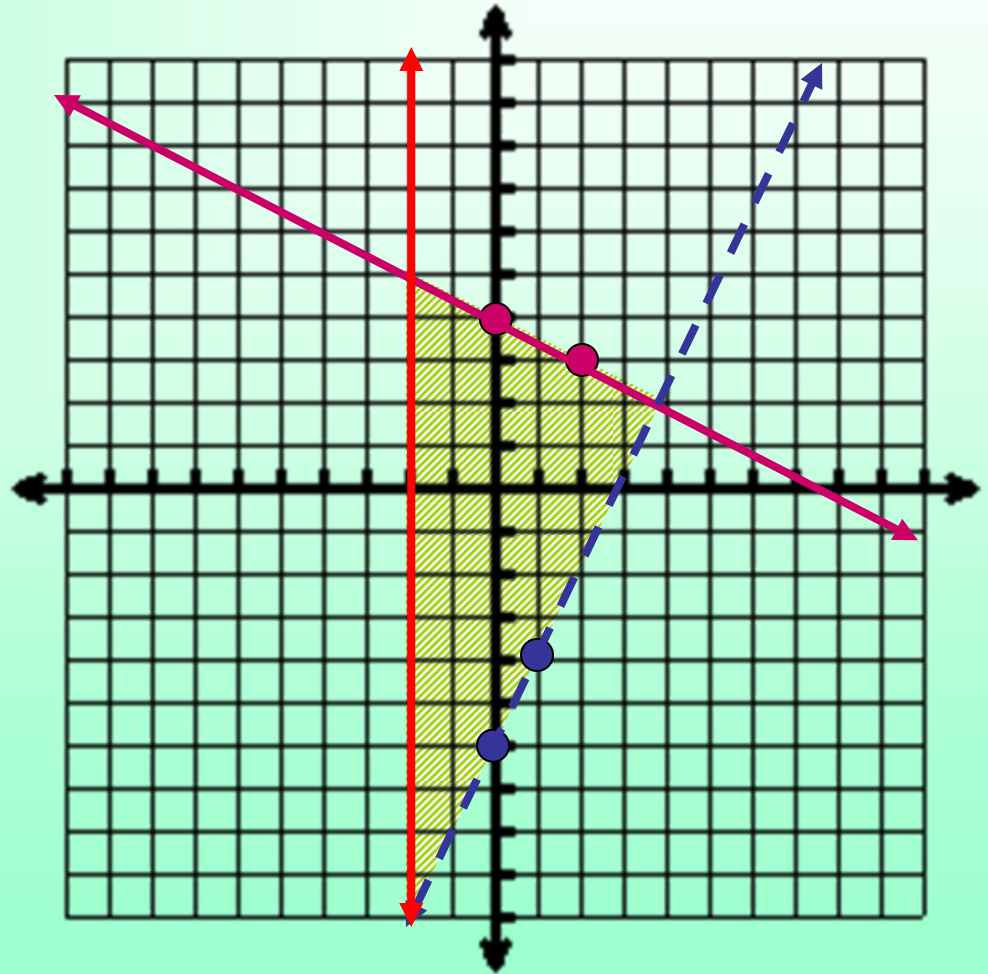
Discussion

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$$\begin{cases} y > 2x - 6 \\ x \geq -2 \\ y \leq -\frac{1}{2}x + 4 \end{cases}$$

Is $(2, 1)$ a solution?

Is $(2, -7)$ a solution?



EQ: What does the solution region to a system of linear inequalities represent?

Ex: Graph the system.

$$x - 2y \leq 3$$

$$y \geq 3x - 4$$

1st inequality

x-int (3,0)

y-int (0, -3/2)

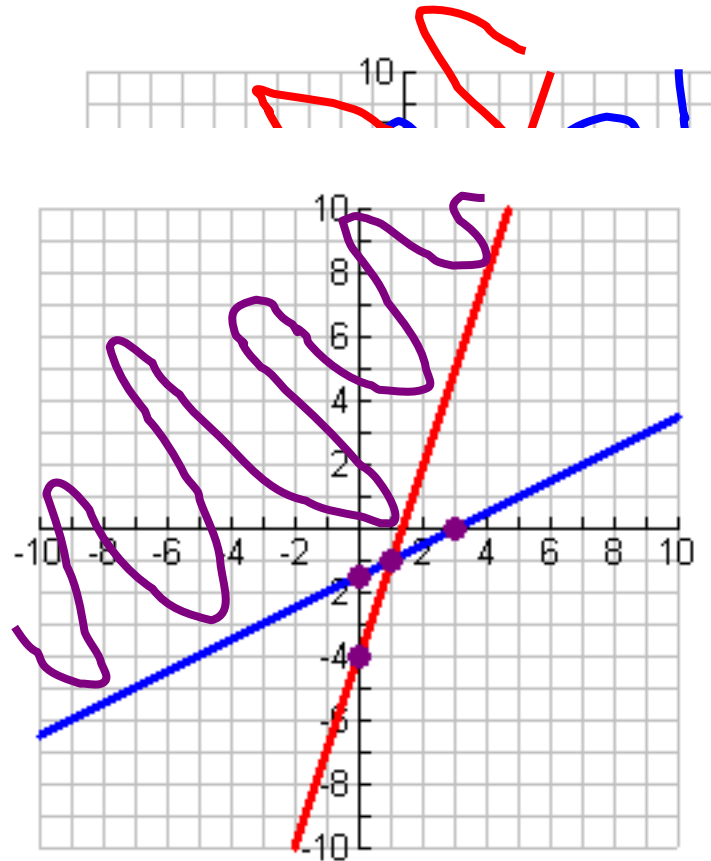
Test point?

2nd inequality

y-int (0,-4)

Slope: 3

Test point?



system of linear inequalities represent?

E

Ex: Graph the system.

$$x \leq 0$$

$$y \geq 0$$

$$x - y \geq -2$$

1st inequal.

Vertical line

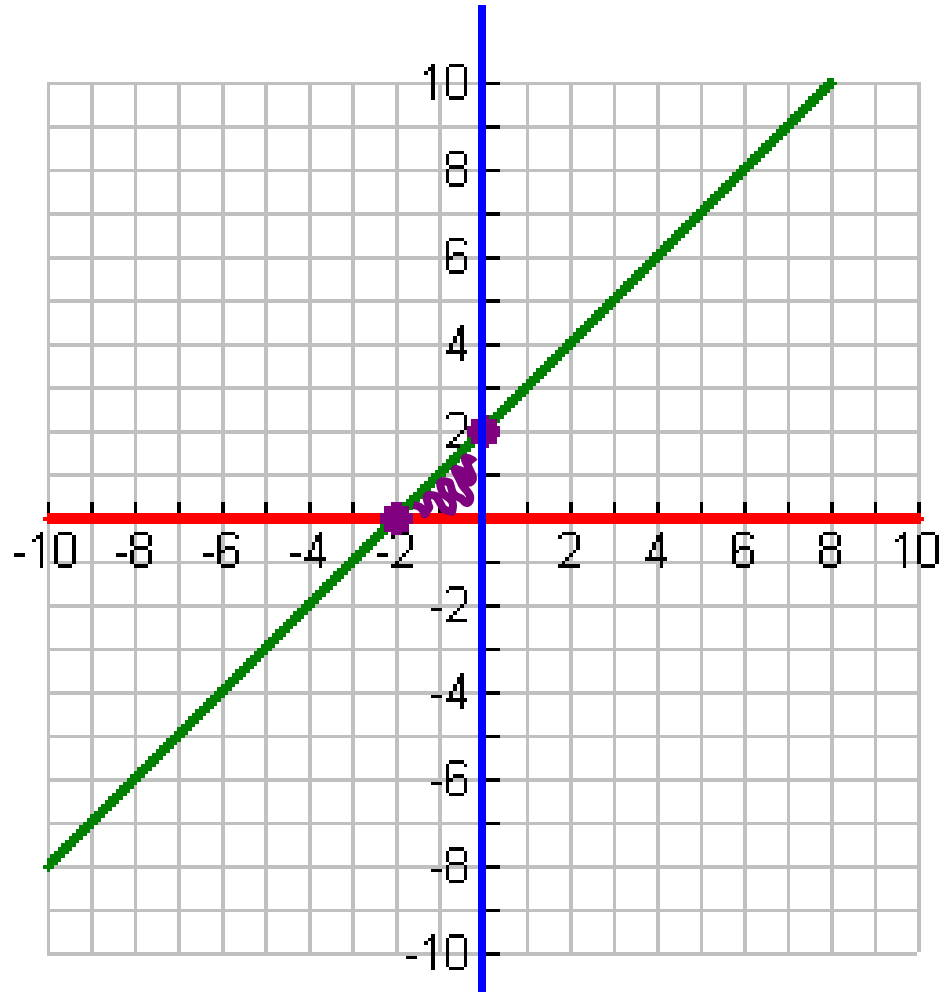
2nd inequal.

Horizontal line

3rd inequal.

x-int (-2,0)

y-int (0,2)



Ex: What does the solution region to a system of linear inequalities represent?

An icon depicting a blue folder with a yellow border, containing a purple notepad with a math problem $\frac{2}{4}$, a yellow pencil, and a red eraser.

Class Work

Thursday,
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- Worksheet:

-

EQ: What does the solution region to a system of linear inequalities represent?