

Name: _____ Per: _____



Objective: Systems of Linear Inequalities

Homework SY7– NYA p.414 #1 – 6, 16, 17, 23, 25, 26

Do Now: Name two coordinate solutions for each.

| | |
|-----------------|--------------------|
| 1. $5x \geq 2y$ | 2. $5y < 15x - 35$ |
|-----------------|--------------------|

Exam Prep: Which inequality has no solutions? a) $-5 < y$ and $y > 1$ b) $-10 \leq y < -5$ c) $2.1 \leq y \leq 2.1$ d) $0 > y \geq 10$

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|--|--|--|
| <p style="text-align: center;">BLUE + RED = PURPLE (Sweeeeet!)</p> <p>Two or more linear inequalities form a <u>system of linear inequalities</u>.</p> <p>$x \geq 1$ is light red or pink</p> <p>$y < -2$ is light blue</p> <p>Together they are a system with a common solution area in lavender.</p> | | <p>Only points common to both are solutions to the system.</p> <p>(0, 0) for none! (1, 1) for $x \geq 1$ (0, -3) for $y < -2$ (2, -4) for both! (1, -2)? (1, -5)?</p> |
|--|--|--|

Practice: Graph these systems and verify the solutions using substitution.

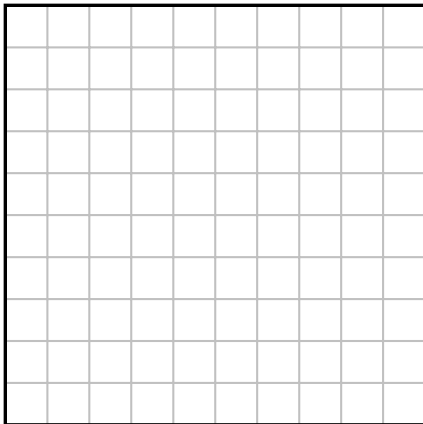
| | | | |
|--------------------------|---|--|---|
| | <p style="text-align: center;">$y > 2x - 5$ $3x + 4y < 12$</p> <p><u>Solutions?</u> A) (0, 0) B) (2, -2) C) (-1, 3)</p> <p style="text-align: center;">Check Using Substitution</p> | | <p style="text-align: center;">$y \geq -x + 2$ $2x + 4y < 4$</p> <p><u>Solutions?</u> A) (0, 0) B) (5, -2) C) (4, 4)</p> <p style="text-align: center;">Check Using Substitution</p> |
| Give 3 Solutions: | Give 3 Solutions: | | |

Practice: Write the system of linear inequalities from the graph

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|----|----|----|
| | | |
| A) | B) | C) |

Practice: Word Problem

Animal Habitat. A zoo keeper wants to fence a rectangular habitat for goats. The length of the habitat should be at least 80 ft, and the distance around it should be no more than 310 ft. What are the possible dimensions of the habitat?



Let x = width of the habitat.
Let y = length of the habitat.

Linear System:

Solutions: