

The Secret of Solving System of Linear Equations and Inequalities Students Must Know

Lesson 005 | Algebra I | Systems of equations and inequalities

<https://www.youtube.com/watch?v=MpKir3Z60H4>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Solve the system $x + y = 18$, $4x - y = 17$.

02

Solve the system $x + y = 15$, $7x - y = 9$.

03

Graph the system $y \geq 12x - 13$ and $y < -x + 10$. Does $(0, 0)$ satisfy it?

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Name: _____ Date: _____ Show your reasoning.

04 Solve the system $x + y = 17$, $3x - y = 3$.

05 Solve the system $x + y = 17$, $4x - y = 18$.

06 Graph the system $y \geq 8x - 14$ and $y < -x + 4$. Does $(0, 0)$ satisfy it?

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01 Solve the system $x + y = 18$, $4x - y = 17$.

Add the equations: $5x = 35$, so $x = 7$. Substitute into $x + y = 18$: $y = 11$.

02 Solve the system $x + y = 15$, $7x - y = 9$.

Add the equations: $8x = 24$, so $x = 3$. Substitute into $x + y = 15$: $y = 12$.

03 Graph the system $y \geq 12x - 13$ and $y < -x + 10$. Does $(0, 0)$ satisfy it?

Draw $y = 12x - 13$ solid and shade above; draw $y = -x + 10$ dashed and shade below. Their overlap is the solution. $(0,0)$ satisfies $0 \geq -13$ and $0 < 10$.

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04 Solve the system $x + y = 17$, $3x - y = 3$.

Add the equations: $4x = 20$, so $x = 5$. Substitute into $x + y = 17$: $y = 12$.

05 Solve the system $x + y = 17$, $4x - y = 18$.

Add the equations: $5x = 35$, so $x = 7$. Substitute into $x + y = 17$: $y = 10$.

06 Graph the system $y \geq 8x - 14$ and $y < -x + 4$. Does $(0, 0)$ satisfy it?

Draw $y = 8x - 14$ solid and shade above; draw $y = -x + 4$ dashed and shade below. Their overlap is the solution. $(0,0)$ satisfies $0 \geq -14$ and $0 < 4$.