

2021 Algebra I Final Review or Sample Final

Lesson 014 | Algebra I | Linear equations • Systems of equations and inequalities • Quadratic equations and graphs

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

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

01

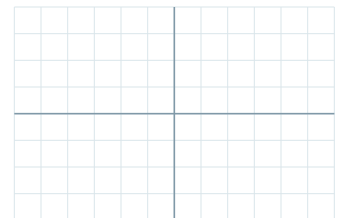
Solve $5x + 11 = 26$.

02

Solve the system $x + y = 11$, $5x - y = 31$.

03

For $y = 6x^2 - 84x + 283$, find the vertex, axis, range, and both x-intercepts; sketch the graph.



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04

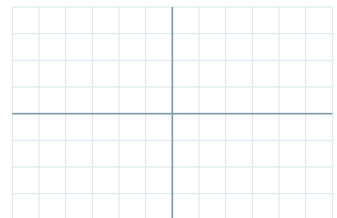
Solve $5x + 6 = 76$.

05

Solve the system $x + y = 7$, $5x - y = 23$.

06

For $y = 7 \cdot x^2 - 70 \cdot x + 170$, find the vertex, axis, range, and both x-intercepts; sketch the graph.



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01

Solve $5x + 11 = 26$.

Subtract 11: $5x = 15$. Divide by 5: $x = 3$.

02

Solve the system $x + y = 11$, $5x - y = 31$.

Add the equations: $6x = 42$, so $x = 7$. Substitute into $x + y = 11$: $y = 4$.

03

For $y = 6x^2 - 84x + 283$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

Complete the square: $y = 6(x - 7)^2 - 11$. Vertex $(7, -11)$; axis $x = 7$; range $y \geq -11$. Solve $(x-7)^2 = 11/6$: $x = 7 \pm \sqrt{11/6}$.

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04

Solve $5x + 6 = 76$.

Subtract 6: $5x = 70$. Divide by 5: $x = 14$.

05

Solve the system $x + y = 7$, $5x - y = 23$.

Add the equations: $6x = 30$, so $x = 5$. Substitute into $x + y = 7$: $y = 2$.

06

For $y = 7x^2 - 70x + 170$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

Complete the square: $y = 7(x - 5)^2 - 5$. Vertex $(5, -5)$; axis $x = 5$; range $y \geq -5$. Solve $(x-5)^2 = 5/7$: $x = 5 \pm \sqrt{5/7}$.