

Pre Calculus Honors Chapter 1 and 2 Lecture Part 4 Quadratic Functions Analysis

Lesson 206 | Precalculus | Quadratic equations and graphs

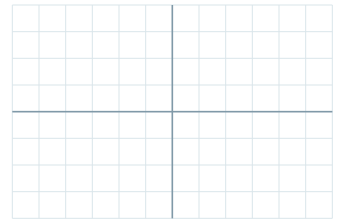
<https://www.youtube.com/watch?v=2HkTKzU5g-4>

Original practice aligned to the saved video title.

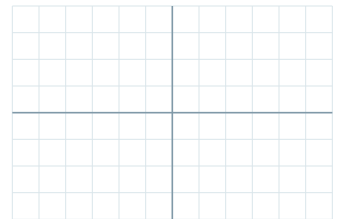
Name: _____ Date: _____ Show your reasoning.

01

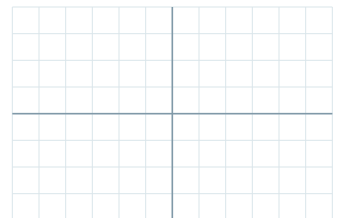
For $y = 10 \cdot x^2 + 20 \cdot x + 1$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

**02**

For $y = 13 \cdot x^2 + 156 \cdot x + 458$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

**03**

For $y = 13 \cdot x^2 - 130 \cdot x + 321$, find the vertex, axis, range, and both x-intercepts; sketch the graph.



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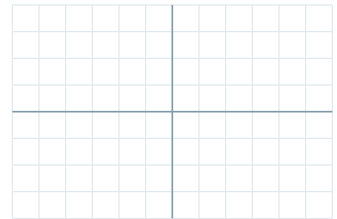
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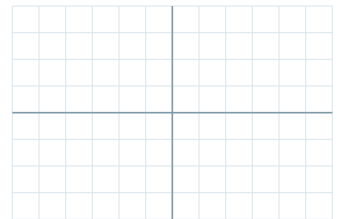
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04

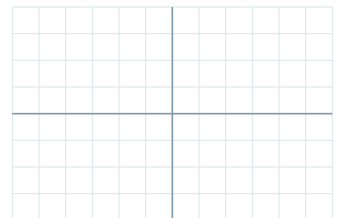
For $y = 13x^2 - 78x + 115$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

**05**

For $y = 11x^2 - 154x + 533$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

**06**

For $y = 7x^2 - 14x + 4$, find the vertex, axis, range, and both x-intercepts; sketch the graph.



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01

For $y = 10x^2 + 20x + 1$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

Complete the square: $y = 10(x - (-1))^2 - 9$. Vertex $(-1, -9)$; axis $x = -1$; range $y \geq -9$. Solve $(x - (-1))^2 = 9/10$: $x = -1 \pm \sqrt{9/10}$.

02

For $y = 13x^2 + 156x + 458$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

Complete the square: $y = 13(x - (-6))^2 - 10$. Vertex $(-6, -10)$; axis $x = -6$; range $y \geq -10$. Solve $(x - (-6))^2 = 10/13$: $x = -6 \pm \sqrt{10/13}$.

03

For $y = 13x^2 - 130x + 321$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

Complete the square: $y = 13(x - (5))^2 - 4$. Vertex $(5, -4)$; axis $x = 5$; range $y \geq -4$. Solve $(x - (5))^2 = 4/13$: $x = 5 \pm \sqrt{4/13}$.

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04

For $y = 13x^2 - 78x + 115$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

Complete the square: $y = 13(x - 3)^2 - 2$. Vertex (3, -2); axis $x = 3$; range $y \geq -2$. Solve $(x-3)^2 = 2/13$: $x = 3 \pm \sqrt{2/13}$.

05

For $y = 11x^2 - 154x + 533$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

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

06

For $y = 7x^2 - 14x + 4$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

Complete the square: $y = 7(x - 1)^2 - 3$. Vertex (1, -3); axis $x = 1$; range $y \geq -3$. Solve $(x-1)^2 = 3/7$: $x = 1 \pm \sqrt{3/7}$.