

The Valuable Lesson of Pre Cal Honors Chapter 1 and 2 Part 1

Lesson 203 | Precalculus | Functions, composition and piecewise rules • Graph transformations • Quadratic equations and graphs

https://www.youtube.com/watch?v=cGUF_rEUBvU

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

01

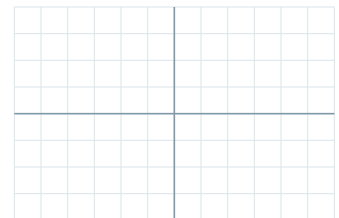
Let $f(x) = 2x + 13$ for $x < -3$, and $f(x) = x^2 + 12$ for $x \geq -3$. Find $f(-4)$, $f(-3)$, and $f(-2)$.

02

Describe the transformations from $y = \sqrt{x}$ to $y = -2\sqrt{x - (-6)} + 8$. Give domain, range, and endpoint.

03

For $y = 12x^2 - 10$, find the vertex, axis, range, and both x-intercepts; sketch the graph.



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04

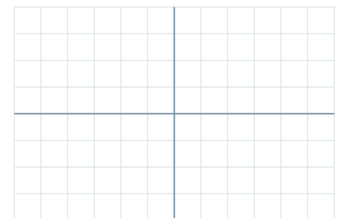
Let $f(x) = 13x + 12$ for $x < -2$, and $f(x) = x^2 + 14$ for $x \geq -2$. Find $f(-3)$, $f(-2)$, and $f(-1)$.

05

Describe the transformations from $y = \sqrt{x}$ to $y = -8\sqrt{x - (-1)} + 14$. Give domain, range, and endpoint.

06

For $y = 13x^2 + 52x + 41$, find the vertex, axis, range, and both x-intercepts; sketch the graph.



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01

Let $f(x) = 2x + 13$ for $x < -3$, and $f(x) = x^2 + 12$ for $x \geq -3$. Find $f(-4)$, $f(-3)$, and $f(-2)$.

Choose the rule from the input interval: $f(-4) = 5$; $f(-3) = 21$; $f(-2) = 16$. Equality uses the second rule.

02

Describe the transformations from $y = \sqrt{x}$ to $y = -2\sqrt{x - (-6)} + 8$. Give domain, range, and endpoint.

Shift horizontally by -6, stretch vertically by 2, reflect across the x-axis, and move up 8. Domain $x \geq -6$; range $y \leq 8$; endpoint $(-6, 8)$.

03

For $y = 12x^2 - 10$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

Complete the square: $y = 12(x - (0))^2 - 10$. Vertex $(0, -10)$; axis $x = 0$; range $y \geq -10$. Solve $(x - (0))^2 = 10/12$: $x = 0 \pm \sqrt{(10/12)}$.

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04

Let $f(x) = 13x + 12$ for $x < -2$, and $f(x) = x^2 + 14$ for $x \geq -2$. Find $f(-3)$, $f(-2)$, and $f(-1)$.

Choose the rule from the input interval: $f(-3) = -27$; $f(-2) = 18$; $f(-1) = 15$. Equality uses the second rule.

05

Describe the transformations from $y = \sqrt{x}$ to $y = -8\sqrt{x - (-1)} + 14$. Give domain, range, and endpoint.

Shift horizontally by -1, stretch vertically by 8, reflect across the x-axis, and move up 14. Domain $x \geq -1$; range $y \leq 14$; endpoint $(-1, 14)$.

06

For $y = 13x^2 + 52x + 41$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

Complete the square: $y = 13(x - (-2))^2 - 11$. Vertex $(-2, -11)$; axis $x = -2$; range $y \geq -11$. Solve $(x - (-2))^2 = 11/13$: $x = -2 \pm \sqrt{11/13}$.