

Pre-Cal Chapter 2 Sample Test Questions

Lesson 176 | Precalculus | Functions, composition and piecewise rules • Graph transformations • Quadratic equations and graphs

<https://www.youtube.com/watch?v=sKDoc83Vrlo>

Related review: exact coverage needs teacher confirmation.

Name: _____ Date: _____ Show your reasoning.

01

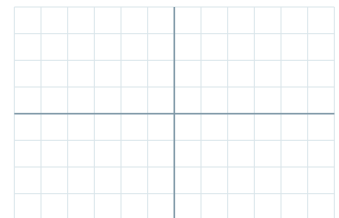
Let $f(x) = 2x + 7$ for $x < 4$, and $f(x) = x^2 + 6$ for $x \geq 4$. Find $f(3)$, $f(4)$, and $f(5)$.

02

Describe the transformations from $y = \sqrt{x}$ to $y = -13\sqrt{(x - 4))} + 7$. Give domain, range, and endpoint.

03

For $y = 10 \cdot x^2 - 100 \cdot x + 238$, find the vertex, axis, range, and both x-intercepts; sketch the graph.



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04

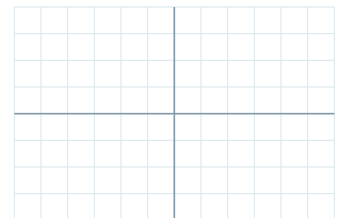
Let $f(x) = 14x + 11$ for $x < 6$, and $f(x) = x^2 + 8$ for $x \geq 6$. Find $f(5)$, $f(6)$, and $f(7)$.

05

Describe the transformations from $y = \sqrt{x}$ to $y = -5\sqrt{x - (-8)} + 9$. Give domain, range, and endpoint.

06

For $y = 11x^2 + 198x + 888$, find the vertex, axis, range, and both x-intercepts; sketch the graph.



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01

Let $f(x) = 2x + 7$ for $x < 4$, and $f(x) = x^2 + 6$ for $x \geq 4$. Find $f(3)$, $f(4)$, and $f(5)$.

Choose the rule from the input interval: $f(3) = 13$; $f(4) = 22$; $f(5) = 31$. Equality uses the second rule.

02

Describe the transformations from $y = \sqrt{x}$ to $y = -13\sqrt{(x - 4))} + 7$. Give domain, range, and endpoint.

Shift horizontally by 4, stretch vertically by 13, reflect across the x-axis, and move up 7. Domain $x \geq 4$; range $y \leq 7$; endpoint (4,7).

03

For $y = 10 \cdot x^2 - 100 \cdot x + 238$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

Complete the square: $y = 10(x - 5))^2 - 12$. Vertex (5, -12); axis $x = 5$; range $y \geq -12$. Solve $(x - 5))^2 = 12/10$: $x = 5 \pm \sqrt{(12/10)}$.

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04

Let $f(x) = 14x + 11$ for $x < 6$, and $f(x) = x^2 + 8$ for $x \geq 6$. Find $f(5)$, $f(6)$, and $f(7)$.

Choose the rule from the input interval: $f(5) = 81$; $f(6) = 44$; $f(7) = 57$. Equality uses the second rule.

05

Describe the transformations from $y = \sqrt{x}$ to $y = -5\sqrt{x - (-8)} + 9$. Give domain, range, and endpoint.

Shift horizontally by -8, stretch vertically by 5, reflect across the x-axis, and move up 9. Domain $x \geq -8$; range $y \leq 9$; endpoint $(-8, 9)$.

06

For $y = 11x^2 + 198x + 888$, find the vertex, axis, range, and both x-intercepts; sketch the graph.

Complete the square: $y = 11(x - (-9))^2 - 3$. Vertex $(-9, -3)$; axis $x = -9$; range $y \geq -3$. Solve $(x - (-9))^2 = 3/11$: $x = -9 \pm \sqrt{3/11}$.