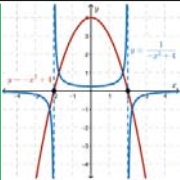


Unit 5: Absolute Values, Reciprocals, Systems, Inequalities

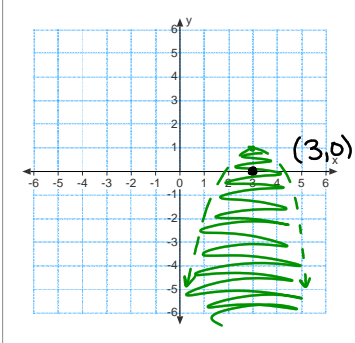


5.7 Graphing Quadratic Inequalities in Two Variables

When shading a quadratic inequality, either shade "inside" the parabola or "outside" it.

Ex.) Graph and verify: "Shade < the graph"

$y < -2(x-3)^2 + 1$
 . opens down
 · (3, 1) vertex



Solution region

Verify:

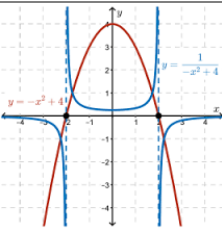
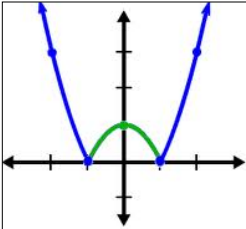
$$y < -2(x-3)^2 + 1$$

$$0 < -2(3-3)^2 + 1$$

$$0 < 1$$

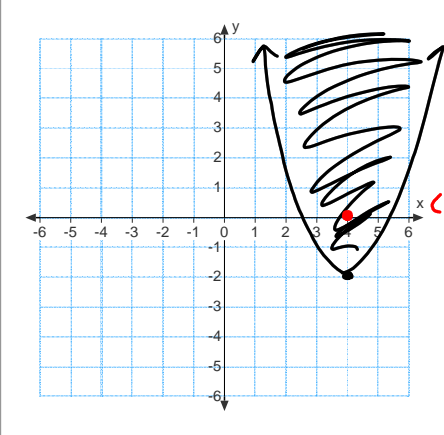
✓

Division by negative, switch the inequality



Ex.) Graph and verify: "shade ≥ the graph"

$y \geq (x-4)^2 - 2$
 Vertex: (4, -2)



Verify:

$$y \geq (x-4)^2 - 2$$

$$0 \geq (4-4)^2 - 2$$

$$0 \geq -2$$

Pg. 496 #1-5.