

Practice

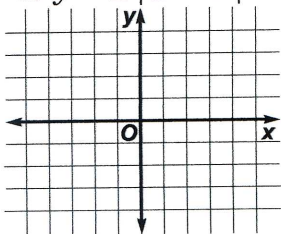
Graphs of Nonlinear Inequalities

Determine whether the ordered pair is a solution for the given inequality.
Write yes or no.

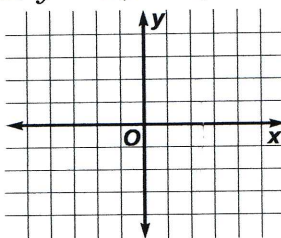
1. $y > (x + 2)^2 + 3$, $(-2, 6)$ 2. $y < (x - 3)^3 + 2$, $(4, 5)$ 3. $y \leq |2x - 4| - 1$, $(-4, 1)$

Graph each inequality.

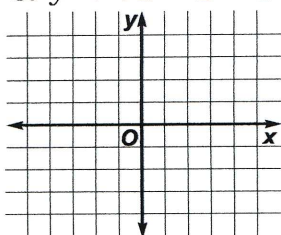
4. $y \leq 2|x - 1|$



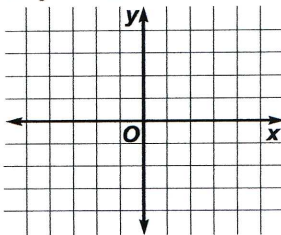
5. $y > 2(x - 1)^2$



6. $y < \sqrt{x - 2} + 1$



7. $y \geq (x + 3)^3$



Solve each inequality.

8. $|4x - 10| \leq 6$

9. $|x + 5| + 2 > 6$

10. $|2x - 2| - 1 < 7$

11. **Measurement** Instructions for building a birdhouse warn that the platform, which ideally measures 14.75 cm^2 , should not vary in size by more than 0.30 cm^2 . If it does, the preconstructed roof for the birdhouse will not fit properly.

a. Write an absolute value inequality that represents the range of possible sizes for the platform. Then solve for x to find the range.

b. Dena cut a board 14.42 cm^2 . Does the platform that Dena cut fit within the acceptable range?