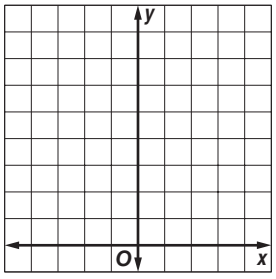
NAME _____ DATE _____ PERIOD _____

5-8 Practice

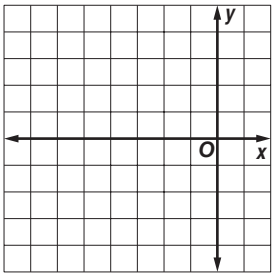
Quadratic Inequalities

Graph each inequality.

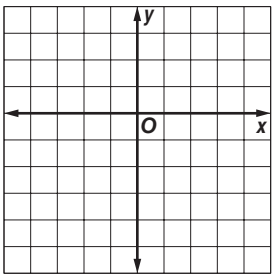
1. $y \leq x^2 + 4$



2. $y > x^2 + 6x + 6$



3. $y < 2x^2 - 4x - 2$



Solve each inequality.

4. $x^2 + 2x + 1 > 0$

5. $x^2 - 3x + 2 \leq 0$

6. $x^2 + 10x + 7 \geq 0$

7. $x^2 - x - 20 > 0$

8. $x^2 - 10x + 16 < 0$

9. $x^2 + 4x + 5 \leq 0$

10. $x^2 + 14x + 49 \geq 0$

11. $x^2 - 5x > 14$

12. $-x^2 - 15 \leq 8x$

13. $-x^2 + 5x - 7 \leq 0$

14. $9x^2 + 36x + 36 \leq 0$

15. $9x \leq 12x^2$

16. $4x^2 + 4x + 1 > 0$

17. $5x^2 + 10 \geq 27x$

18. $9x^2 + 31x + 12 \leq 0$

19. FENCING Vanessa has 180 feet of fencing that she intends to use to build a rectangular play area for her dog. She wants the play area to enclose at least 1800 square feet. What are the possible widths of the play area?

20. BUSINESS A bicycle maker sold 300 bicycles last year at a profit of $300 each. The maker wants to increase the profit margin this year, but predicts that each $20 increase in profit will reduce the number of bicycles sold by 10. How many $20 increases in profit can the maker add in and expect to make a total profit of at least $100,000?