Test Review 5.5, 5.6, 5.7, 5.9 Algebra 2 Name _____

Simplify. Express each number in terms of ***i***.

1. $\sqrt{-27}$

2. $\sqrt{-48}$

Solve each equation.

3. $x^2 = -256$

4. $4x^2 + 144 = 0$

Find each complex conjugate.

5. $\sqrt{13} + 9i$

6. $-11 + 45i$

Find the value of the discriminant ($b^2 - 4ac$), the number of solutions, and the type of solutions.

7. $-x^2 - 5x + 6 = 0$

8. $4x^2 - 5x - 6 = 0$

9. $x^2 - 6x + 9 = 0$

Find the zeros of the function by using the Quadratic Formula.

10. $x^2 - 3x - 10 = 0$

11. $x^2 - 16 = 0$

12. $4x^2 + 4x = 15$

13. $x^2 - 16x + 64 = 0$

Determine whether the ordered pair is a solution of the inequality. Show your work

14. $y < x^2 - 2x + 4,\ (2,1)$

15. $y > 2x^2 + x - 5,\ (-2,0)$

16. $y \le 2x^2 + 5x + 6,\ (2,-4)$

Solve each quadratic inequality algebraically, then graph the solution on a number line.

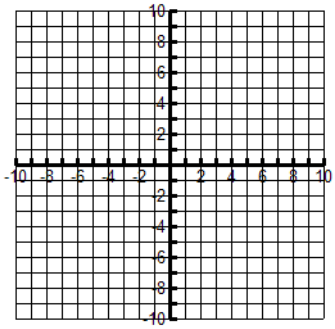
17. $x^2 - 11x + 13 < 25$

18. $x^2 - 5x - 24 \ge 0$

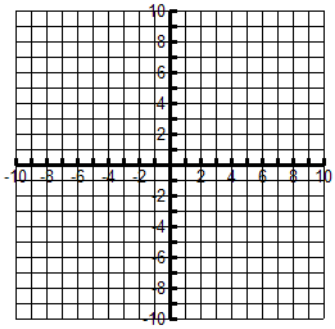
19. $x^2 - 5x + 3 \le 3$

Graph each quadratic inequality.

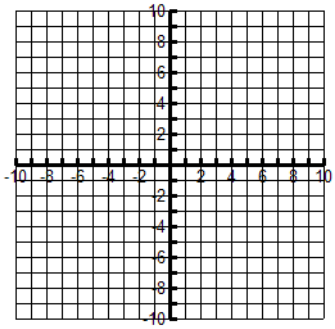
20. $y \le x^2 - 2x + 4$



21. $y \le -x^2 + 3x - 5$



22. $y > 2x^2 - 3x - 6$



Add and Subtract the Complex Number.

23. $(2+4i)+(3-2i)$

24. $(-5-6i)+(1-12i)$

25. $(-8-3i)-(-6-7i)$

Multiply or simply the complex number.

26. $(2+2i)(4-i)$

27. $(4+3i)^2$

28. $\dfrac{5-2i}{3+i}$