Quadratics Review

1. What is the standard form of a quadratic equation?_____
2. What is the vertex form of a quadratic equation?_____
3. What do you know about the direction of opening of a parabola, based on "a"?_____
4. What is the equation for the axis of symmetry?_____
5. What three things do you need from a quadratic equation to convert from standard form to vertex form?_____
6. Describe what the maximum and the minimum value means when describing a parabola?_____
7. What are the x-intercepts of a parabola?_____
8. Will a parabola that has two imaginary solutions ever cross the x axis?_____
9. What is the quadratic formula?_____
10. The quadratic formula gives you the _____ of a quadratic equation.
11. What is the discriminant?_____
12. What are the three discriminant rules we learned in class? (Hint: inequality symbols)
13. If you are solving an equation using the factoring method, what must you do with the factors to find the solutions?_____
14. A parabola whose vertex is at the origin will have a quadratic equation that is missing…._____
15. In order to either use factoring or the quadratic formula to solve a quadratic equation, you must first set the equation_____.
16. What must you do to simplify a radical that has a negative number underneath?_____
17. Simplify: $5(9+2i)-3(-7+4i)$
18. Simplify: $(-11+4i)-(1-5i)$
19. Simplify: $(4-9i)(7+3i)$
20. Solve the equation: $5x^2+45=0$
21. Solve the equation: $-2x^2-24=0$
22. Simplify: $\frac{-5-3i}{2-2i}$
23. Convert from standard form to vertex form: $y=2x^2-12x+25$
24. Convert from standard form to vertex form: $y=5x^2-10x+9$
25. Convert from standard form to vertex form: $y=3x^2-12x+5$
26. Convert from standard form to vertex form: $y=-4x^2+16x-11$
27. Solve by factoring: $3x^2=15x$
28. Solve by factoring: $4x^2-5x=21$
29. Solve by factoring: $12x^2-8x+1=0$
30. Solve by factoring: $x^2-30=-7x$
31. Identify vertex, axis of symmetry, and direction of opening: $y=-7(x+1)^2-9$
32. Identify vertex, axis of symmetry, and direction of opening: $y=16(x-4)^2+1$
33. Identify vertex, axis of symmetry, and direction of opening: $y=\frac{1}{2}x^2$
34. Identify vertex, axis of symmetry, and direction of opening: $y=-\frac{5}{2}(x-5)^2$