Quadratic Equations Review #1

Solve each equation by **factoring.**

1. $x^2 - 4x - 32 = 0$
2. $4x^2 + 20x = 0$
3. $d^2 - 29d = -100$
4. $18x^2 + 29x + 3 = 0$

Solve each equation by **completing the square.**

5. $x^2 + 4 = 8x$
6. $x^2 - 5x = 8$
7. $2x^2 - 12x = 8$
8. $4x^2 - 12x = 16$

Solve each equation by **using the quadratic formula.**

9. $x^2 + 2x = 7$
10. $2x^2 - 12x + 5 = 0$
11. $2x - 5x^2 + 3 = 0$
12. $6x^2 - 3x + 2 = 0$

Solve each equation by **using any method.**

13. $3x^2 + 6x + 3 = 0$
14. $x^2 + 6x = 4$
15. $2x^2 + x - 1 = 3$
16. $3x^2 + 2 = -7x$
17. $r^2 = 3r + 70$
18. $(x - 3)^2 = 6$
19. $6x^2 - 8x + 9 = 4$
20. $4x^2 + 8x = -3$

Write the equation of the parabola with the given info:

21. Focus (-1, 6) Directrix y=0
22. Focus (3,-2) Directrix y=-4

Given a = -3 + 2i and b= 4-5i

23. Find a+ b
24. Find a – b
25. Find the product of a and b
26. Find 2a – 3b
27. Find $a^2 - b^2$

Use your **calculator** to answer the following questions:

28. A ball is thrown upward vertically with an initial speed of 96 feet per second. The equation $h = 96t - 16t^2$ gives the height of the ball in t in seconds. What is the maximum height reached by the ball? When will the ball be 128 feet above its starting point?

29. Terry has 200 yards of fencing to enclose a rectangular garden on three sides. The fourth side will be the side of the house. What dimensions of the garden will maximize the area?

(HONORS) Write the quadratic equation with the given solutions

30. 3, -8
31. -5, $-\frac{3}{4}$
32. $-2 \pm i$
33. $3 \pm 4\sqrt{3}$
34. $\frac{4 \pm 2i\sqrt{2}}{5}$
35. $-3 \pm 5i$

(HONORS) Solve by factoring.

36. $x^4 - 6x^2 + 5 = 0$
37. $a^3 - 81a = 0$
38. $x - 4\sqrt{x} + 3 = 0$
39. $x^{\frac{1}{2}} + 3x^{\frac{1}{4}} - 10 = 0$