HW #38: SHOW ALL WORK on a separate piece of paper.

Problems 1 - 6, write the expression as a complex number in standard form.

1. $(-3-8i)+(-5-7i)$
2. $(5-2i)-2(3+i)$
3. $-i+(7-5i)-3(2-3i)$
4. $(2+3i)(1-4i)$
5. $\dfrac{5}{1+i}$
6. $\dfrac{8+7i}{3-4i}$
7. Simplify $\dfrac{\sqrt{6}}{4+\sqrt{2}}$.

Solve by factoring

8. $4x^2-12x-16=0$
9. $3x^2=x+14$

Solve by square roots

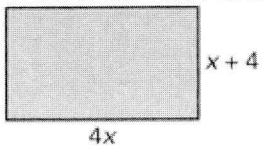
10. $3x^2-9=3$
11. $3(x-8)^2-29=37$

Solve using the quadratic formula

12. $4x^2-8x+1=0$
13. $3x^2+x-1=0$

Solve using any method

14. $-5x^2-3x=4$
15. $\dfrac{1}{3}x^2+1=33$
16. $x^2+2x=24$
17. $4x^2+20=0$
18. $-3x^2-12x+18=0$
19. $x^2-4x-2=0$
20. Determine the number and type of solutions of the equation. $4x^2-3x-7=0$
21. Determine the number and type of solutions of the equation. $5x^2-3x+1=0$
22. Determine the number and type of solutions of the equation. $9x^2-30x+25=0$
23. The area of the rectangle shown is 84 square units. What is the value of x?



24. You plant a garden that measures 12 ft by 8 ft. You want to put a border of uniform width around the garden. The border is to be the same area as the garden. What should the width of the border be?
25. While marching, a drum major tosses a baton into the air and catches it. The height h (in feet) of the baton after t seconds can be modeled by $h=-16t^2+32t+6$. If the drum major drops the baton, how long is it in the air?