Algebra 2 Ch. 4.5 Retake Problems Name:_____

Completing the Square (4.5)

Practice. If necessary use fractions and **NO DECIMALS!!** $c = \left(\frac{b}{2}\right)^2$

Complete the square and write it in factored form (as a squared binomial)	
1. $x^2 - 22x +$_____ = ( )^2	7. $x^2 - \frac{1}{2}x +$_____=
2. $x^2 + 12x +$_____= ( )^2	8. $x^2 - \frac{5}{7}x +$_____=
3. $x^2 + x +$_____= ( )^2	9. $x^2 - 13x +$_____=
4. $x^2 + 10x +$_____=	10. $x^2 - 3x +$_____=
5. $x^2 - 6x +$_____=	11. $x^2 - 34x +$_____=
6. $x^2 + 3x +$_____=	12. $x^2 - 7x +$_____=

Solve each equation by taking the square root of both sides. Don't forget when you take the square root you need to note the two answers with $\pm$.

13. $(x + 7)^2 = 64$

14. $(x - 2)^2 = 15$

15. $(x + 12)^2 = 16$

16. $(x - 8)^2 = 12$

Solve by Completing the Square.

1. $x^2 + 4x = 0$	7. $x^2 + 8x + 16 = 1$
2. $2x^2 - 12x = 0$	8. $x^2 + 18 = 9x$
3. $x^2 - 6x = 23$	9. $x^2 - 14x + 19 = 0$
4. $x^2 - 8x + 16 = 8$	10. $x^2 - 13x + 36 = 0$
5. $x^2 + 4x + 11 = 0$	11. $3x^2 + 2x - 1 = 0$
6. $2x + 4 = x^2$	12. $4x^2 = -12x + 4$

Investments: The amount of money A in an account in which P dollars are invested for 2 years is given by the formula $A = P(1 + r)^2$ where r is the interest rate compounded annually. If the original investment is $\$800$ and the amount A in the account after two years is $\$882$, at what interest rate was it invested?

Hint: Substitute in your values for A and P, then use the square root method to find r. Since r is an interest rate you only care about the positive results and will need to convert your answer into a percent.