Name_____

Section 3.5

Algebra II: Factoring Trinomials Squares

Essential Questions:
When is a trinomial a trinomial square?

When it is the product of 2 equal factors
$(X+3)(X+3)$

Factor Example 1

- Step 1—factor $X^2 + 8X + 16$. Don't forget possible negatives.
  $4 \cdot 4 \quad -4 \cdot -4$

- Step 2 What multiplies to get__16____ $(4 \cdot 4)$

- Step 3 What adds to get___8____ $(4+4)$

- How to tell if it is a trinomial square? If the middle factor is twice a number and the last factor is the square of the same number! look for half of the middle number and then square the answer too see if it is a trinomial square.

- Check $(X+4)(X+4)$
  $X^2 + 4X + 4X + 16$
  $X^2 + 8X + 16$

Factor Example 2

- Step 1—factor $X^2 - 4X + 4$ with factor pairs Don't forget possible negatives.
  $2 \cdot 2$
  $-2 \cdot -2$

- Step 2 What multiplies to get___4____

- Step 3 What adds to get___-4____

- Is it a trinomial square? $(X-2)(X-2)$
  yes

Factoring trinomials—trinomial squares.

Tell if the following are trinomial squares. (write yes or no)

1) $x^2 + 2x + 1$

2) $x^2 + 4x + 4$

3) $n^2 + 6n + 9$

4) $r^2 + r + 4$

5) $x^2 + 4x + 1$

6) $n^2 + 2n + 4$

Factor. Most are trinomial squares.

7) $y^2 + 10y + 25$

8) $a^2 + 4a + 4$

9) $y^2 + 8y + 16$

10) $x^2 + 12x + 36$

11) $x^2 - 4x + 4$

12) $y^2 - 9y + 20$

13) $y^2 + 14 + 49)$

14) $a^2 - 20a + 100$

15) $y^2 + 18y + 81$

16) $x^2 + 15x + 56$

17) $x^2 - 19x + 90$

18) $y^2 - 15y + 36$