Name_____

Section 3.4

Algebra II: Factoring Trinomials—Two differences

Essential Questions:

How do I factor if some of the numbers are negative?
trinomials

Factor Example 1

All possible factors.

- Step 1—factor x^2+6x+9 with ~~factor pairs~~ Don't forget possible negatives.

  1·9
  3·3
  −1·−9
  −3·−3

  or $x^2-8x+15$

  1·15
  3·5
  −1·−15
  −3·−5

- Step 2 What multiplies to get 9 or 15
- Step 3 What adds to get −6 or −8
- Step 4 $(x-3)(x-5)$
- Check $x^2-5x-3x+15$

  $=x^2-8x+15$

Factor Example 2

- Step 1—factor $n^2-10n+16$ with ~~factor pairs~~ Don't forget possible negatives.

  1·16
  2·8
  4·4

  and

  −1·−16
  −2·−8
  −4·−4

- Step 2 What multiplies to get 16
- Step 3 What adds to get −10
- Step 4 $(x-2)(x-8)$
- Check $x^2-8x-2x+16$

  $x^2-10x+16$

Name_____

Class Practice

If you multiply to get this:	And add to get this:	Then the two numbers are:
6	−5	−2 and −3
10	−7	−2 and −5
18	−9	−3 and −6
12	−7	−3 and −4
24	−10	−4 and −6

Do these first

Factor.

6

1 · 6
2 · 3
−1 · −6
−2 · −3

10

1 · 10
2 · 5
−1 · −10
−2 · −5

18

1 · 18
2 · 9
3 · 6
−1 · −18
−2 · −9
−3 · −6

12

1 · 12
2 · 6
3 · 4
−1 · −12
−2 · −6
−3 · −4

24

1 · 24
2 · 12
3 · 8
4 · 6
−1 · −24
−2 · −12
−3 · −8
−4 · −6

Name_____

Factoring trinomials—two differences.

Factor—List all factor pairs.

1) 2

2) 6

3) 1

4) 24

5) 14

6) 28

7) 30

8) 49

9) 4

10) 36

11) 45

12) 80

Factor and check by multiplication.

13) $y^2 - 3y + 2$

14) $a^2 - 5a + 6$

15) $y^2 - 2y + 1$

16) $x^2 - 11x + 24$

17) $x^2 - 9x + 14$

18) $y^2 - 11y + 28$

19) $y^2 - 11 + 30)$

20) $a^2 - 14a + 49$

21) $y^2 - 4y + 4$

22) $x^2 - 15x + 36$

23) $x^2 - 14y + 45$

24) $x^2 - 24x + 80$