

Name: _____ Algebra 10 Unit 7 Lesson 5

Factoring Trinomials (UNfoil)

DO NOW ~ Thursday 11/14

Find the difference of two perfect squares (DOPS). Factor.

$$36x^2 - 121$$

$$(6x+11)(6x-11)$$



Classwork

Find the product of the following binomials (FOIL).

$$(x-2)(x+7)$$

$$x^2 + 7x - 2x - 14$$

$$x^2 + 5x - 14$$

$$(4x-1)(2x-5)$$

$$8x^2 - 20x - 2$$

$$8x^2 - 22x + 5$$

Factor the following trinomials (unFOIL).

$$x^2 + 4x + 3$$

$$\begin{array}{r} (x+1)(x+3) \\ \quad +1x \\ \quad +3x \\ \hline \quad +4x \end{array}$$

$$x^2 + bx + c$$

Steps:

- 1) Factor x^2 (x times x)
- 2) Find the factors of c
- 3) Identify the pair that add up to b
- 4) "Inny, Outy, Addy"

$$x^2 - 2x - 8$$

$$\begin{array}{r} (x+2)(x-4) \\ \quad +2x \\ \quad -4x \\ \hline \quad -2x \end{array}$$

$$y = 8/x$$

$$\begin{array}{r} +18 \\ -8, + \\ \hline -2, 4 \\ \hline 2, -4 \end{array}$$

$$x^2 - 9x + 18$$

$$\begin{array}{r} (x-3)(x-6) \\ \quad -3 \\ \quad -6 \\ \hline \quad -9 \end{array}$$

$$\begin{array}{r} -3, -6 \\ \hline -2, -9 \\ \hline +18 \\ \hline -2, -9 \\ \hline -3, -6 \\ \hline +18 \end{array}$$

DO NOW ~ Friday 11/15

Factor the following trinomial (unFOIL). Look at Friday's notes to help you with the steps.

$$y = 6/x$$

$$x^2 + 5x - 6$$

$$(x + 6)(x - 1)$$

+ 6x
- 1x

$$\begin{array}{r} 1, 6 \\ 2, 3 \end{array}$$



5x

$$y = 20/x$$

Classwork

Factor the following trinomials (unFOIL).

$$2x^2 + 13x + 20$$

$$(2x + 5)(x + 4)$$

+ 5x
+ 8x
+ 20

$$\begin{array}{r} 4, 5 \\ 1, 20 \\ 2, 10 \end{array}$$

$$x^2 + bx + c$$

Steps:

- 1) Factor x^2 (x times x)
- 2) Find the factors of c
- 3) Start guessing and checking!
- 4) "Inny, Outy, Addy"

$$x^2 - 8x + 15$$

$$(x - 3)(x - 5)$$

- 3x
- 5x
+ 15

$$\begin{array}{r} 1, 15 \\ 3, 5 \end{array}$$

$$x^2 + 3x - 40$$

$$(x - 5)(x + 8)$$

- 5x
+ 8x
- 40

$$y = 40/x$$

$$\begin{array}{r} 1, 40 \\ 2, 20 \\ 4, 10 \\ 5, 8 \end{array}$$

$$3x^2 + 11x + 4$$

$$(3x + 1)(x + 4)$$

+ 12x
+ 4x
+ 4

$$\begin{array}{r} 1, 4 \\ 2, 2 \end{array}$$

DO NOW ~ Monday 11/18

Factor the following trinomial (unFOIL).

$$x^2 + 8x - 9$$

$$(x - 1)(x + 9)$$

$-1x$
 $+9x$
 $8x$



Classwork

Factor the following trinomials (unFOIL).

$$x^2 - 10x - 24$$

$$(x - 12)(x + 2)$$

$-12x$
 $+2x$
 $-10x$

1, 24
 2, 12
 3, 8
 4, 6

$$x^2 + 2x - 35$$

$$(x - 5)(x + 7)$$

$-5x$
 $+7x$
 $2x$

5, 7
 1, 35

$$7x^2 - 26x - 8$$

$$(7x + 2)(1x - 4)$$

$+2x$
 $-28x$
 $-26x$

1, 8
 -4, -2

$$2x^2 + 5x - 33$$

$$(2x + 11)(x - 3)$$

$+11x$
 $-6x$
 $+5x$

1, 33
 3, 11

To earn your full participation point for the Do Now be sure to have completed all of the following by the time is up:

- 1) Be in your seat
- 2) Take out your calculator or grab one
- 3) Have last night's homework out
- 4) Complete the do now



DO NOW ~ Tuesday 11/19

Factor the following trinomial (unFOIL).

$x^2 - 5x + 4$

$(x - 1)(x - 4)$

$-1x$

Classwork

$y = 36/x$

1, 4
2, 2
4, 1

Factor the following trinomials (unFOIL). $x^2 - 7x + 12$ $(x - 3)(x - 4)$ $-3x$ $-4x$ $-7x$ 1, 12 2, 6 3, 4	$m^2 - 13m + 36$ $(m - 4)(m - 9)$ $-4m$ $-9m$ $-13m$ ~~1, 36~~ ~~2, 18~~ ~~3, 12~~ <u>4, 9</u> ~~6, 6~~
$3p^2 - 17p - 10$ $(p - 2)(3p + 5)$ $6p$ $-5p$ $1p$ 1, 10 2, 5	$5p^2 + 22p + 21$ $(5p + 7)(p + 3)$ $7p$ $+ 15p$ $22p$ 1, 21 3, 7

Mrs. Ferreri's Station ~ Factoring Trinomials when $a \neq 1$

Factor the following trinomials (unFOIL).

$$x^2 - 5x - 24$$

$$x^2 - 11x + 28$$

$$5x^2 - 24x - 36$$

$$2m^2 - 17m + 36$$

$$5x^2 + 21x - 20$$

$$2v^2 + 3v - 20$$

$$5m^2 - 34m + 45$$

$$5b^2 + 8b - 21$$

Computer Station ~ No Computer today...FOIL (Multiplying Binomials)

Find the product of the following binomials (FOIL).

1) $(3n - 8)(7n - 1)$

2) $(3a - 4)(2a - 7)$

3) $(7x - 2)(x - 6)$

4) $(6k + 2)(5k + 3)$

5) $(x - 6)(5x + 3)$

6) $(b + 6)(b + 2)$

7) $(8r - 6)(6r + 8)$

8) $(8n + 7)(6n + 3)$

9) $(7r - 8)(4r + 6)$

10) $(4b - 7)(8b + 4)$

11) $(5n + 2)(4n + 4)$

12) $(5p + 1)(5p + 7)$

13) $(7r - 5)(3r - 2)$

14) $(8n - 8)(2n + 8)$

15) $(5b - 7)(8b - 4)$

16) $(5p - 7)(p - 2)$

Mrs. Kennedy's Station ~ Factoring Trinomials when $a = 1$

Factor the following trinomials (unFOIL). Use the steps from the classwork.

(a) $x^2 + 10x + 16$

(b) $x^2 + 12x + 35$

(c) $x^2 + 12x + 36$

(d) $x^2 - 5x + 6$

(e) $x^2 - 11x + 28$

(f) $x^2 - 12x + 20$

6

(g) $x^2 - 3x - 18$

(h) $x^2 + 3x - 40$

(i) $x^2 - 10x - 24$

(j) $x^2 - 8x + 15$

(k) $x^2 + 30x + 200$

(l) $x^2 + 8x - 9$

Independent Station ~ Mixed Practice!

Factor. You may need to factor out a GCF or find the difference between two perfect squares (DOPS). Use the last two packets to help you.

$$-9x^2 + 12x - 12$$

$$25x^2 - 16$$

$$x^2 - 16$$

$$-35x^3 - 30x - 50$$

$$24m^6 + 40m^3 + 36m^2$$

$$k^2 - 25$$

$$9v^2 - 25$$

$$4b^2 - 25$$

$$9k^6 + k^2 + 2k$$

$$12m + 12m^2 + 6m^3$$

$$9p^2 - 1$$

$$9x^2 - 16$$

$$80v^3 - 8v^2 + 72$$

$$-4a^3 + 20a + 36$$

Homework ~ Thursday 11/14

Factor the following trinomials (unFOIL). Use the steps from the classwork.

$$x^2 - 16x + 60$$

$$r^2 + 2r - 8$$

$$b^2 - 11b + 18$$

$$n^2 - 3n - 28$$

Homework ~ Monday 11/18

Factor the following trinomials (unFOIL). Use the steps from the classwork. Guess and check!

$$n^2 + n - 12$$

$$2x^2 + 13x + 21$$

$$5x^2 - 21x + 4$$

$$2x^2 + 15x + 28$$

Homework ~ Tuesday 11/19

Factor the following trinomials (unFOIL). Use the steps from the classwork.

$$m^2 - 2m - 15$$

$$x^2 + 10x + 9$$

$$m^2 - 2m - 48$$

$$x^2 - 10x + 16$$