Unit 15 – Lesson 3

Aim: How can we factor trinomials?

Warm Up: Guess the numbers- Think of two numbers that,

(a) Multiply to 15 and add up to 8. 5 + 3

(b) Multiply to 20 and add up to 12 10 + 2

(c) Multiply to 18 and add up to 11 9 + 2

(d) Multiply to -8 and add up to 2 4 + -2

Guided Practice: (Algebra)

Steps for Factoring Trinomials:

1) Use the "headphones" to multiply the first and last term together. Place that product to the sign and add an "x"
2) Find factors of that number that either add or subtract to the middle term
3) Re-write as one big polynomial, with the bigger # written first.
4) Pull out greatest common factors and factor by grouping.

*** You can check by double distributing***

Steps to find all the factors of a number on the calculator:

y = #/x (last term)

Press 2nd graph to look at the table of factor

Exercise 1-6: Given the following trinomials, factor completely

(1) $x^2 + 10x + 21$

$(x+7)(x+3)$

(2) $x^2 - 6x - 16$

$(x-8)(x+2)$

(3) $x^2 - 6x + 9$

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

(4) $x^2 - 6x - 7$

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

(5) $x^2 - 6x + 8$

$(x-4)(x-2)$

(6) $x^2 - 2x + 1$

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

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Problem Set:

(1) $x^2 - x - 12$

$(x-4)(x+3)$

(2) $a^2 - a - 72$

$(a-9)(a+8)$

(3) $y^2 + y - 42$

$(y+7)(y-6)$

(4) $x^2 - 3x - 4$

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

(5) $a^2 - 8a + 7$

$(a-7)(a-1)$

(6) $y^2 + 3y - 10$

$(y+5)(y-2)$

(7) $x^2 - x - 20$

$(x-5)(x+4)$

(8) $a^2 - 2a - 15$

$(a-5)(a+3)$

(9) $y^2 + 2y - 24$

$(y+6)(y-4)$

Factoring Mixed Practice: **hint:* remember to always look to see if we can pull out the GCF first!!

q) $\sqrt{y^2} - \sqrt{36}$

$(y-6)(y+6)$

r) $6y + 24$

$6(y+4)$

s) $y^2 - 3y - 28$

$(y-7)(y+4)$

t) $\sqrt{y^2} - \sqrt{121}$

$(y-11)(y+11)$

u) $15x + 60y$

$15(x+4y)$

v) $y^2 + 13y - 30$

$(y+15)(y-2)$

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