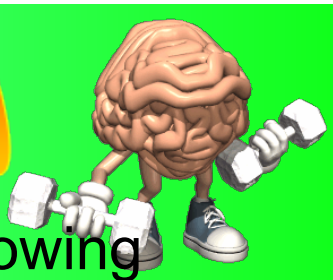
Warm Up



Quiz First then work on the following

1) Expand and Simplify

$(3x+5)^2 + 4(2x + 7)$

$(9x^2 + 15x + 15x + 25) + 8x + 28$

$(9x^2 + 30x + 25) + 8x + 28$

$9x^2 + 30x + 8x + 25 + 28$

$9x^2 + 38x + 53$

2) Factor $24v^4w^{11} - 16v^3w^5 + 56v^7w^2$

$8v^3w^2(3vw^9 - 2w^3 + 7v^3)$

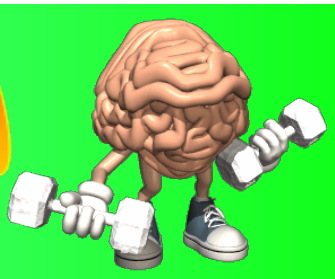
3) Find the LCM and GCF of 84, 24

2	84	24
2	42	12
3	21	6
	7	2

Gcf(84, 24) = 2x2x3 = 12

LCM(84, 24) = 2x2x3 x 7 x 2 = 168

Warm Up



1) Expand and Simplify

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

Look at the numbers in the trinomial and the binomial.

?

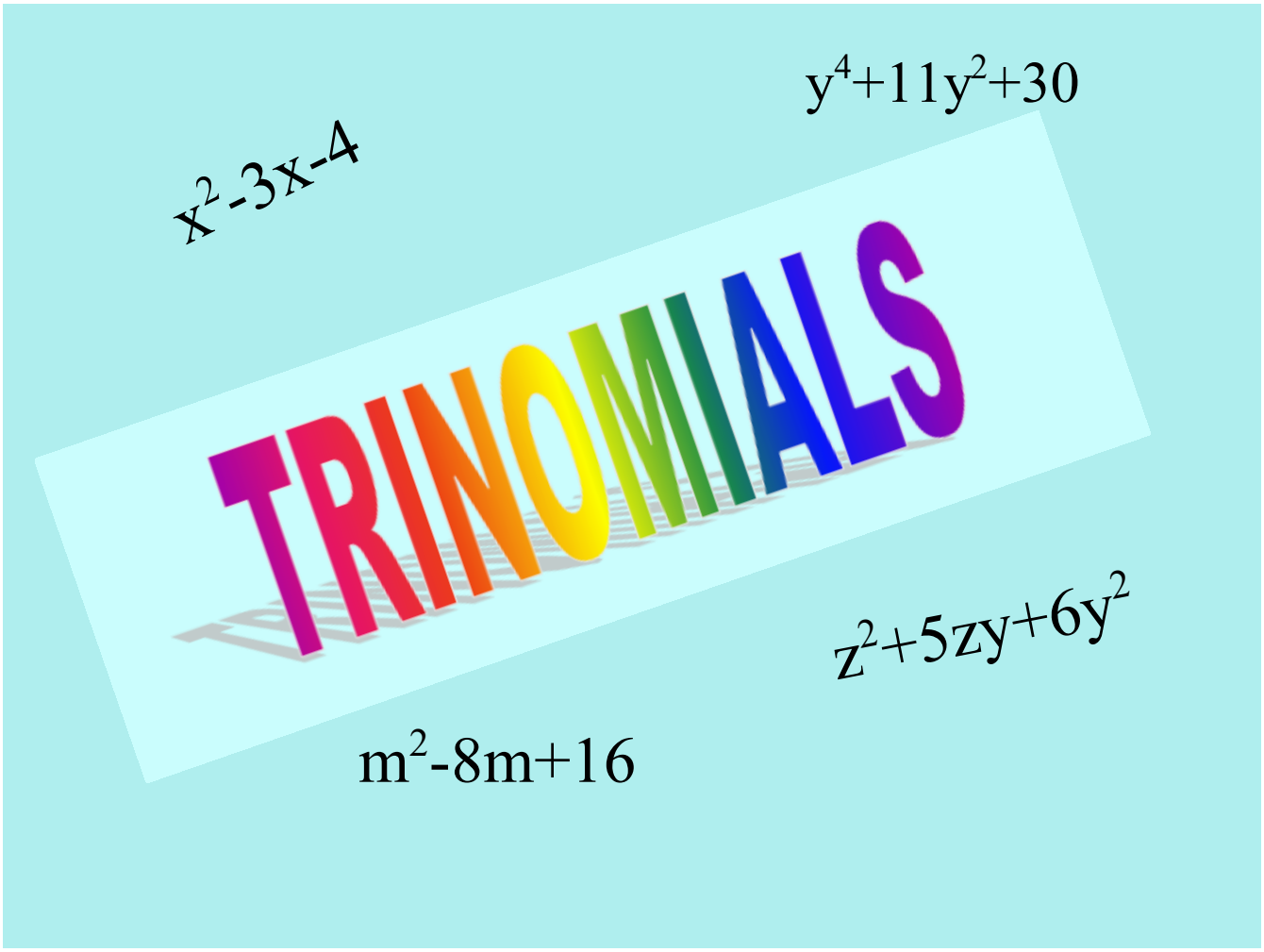
$v^2 + 12v + 20 = (v + 2)(v + 10)$

?

?

?


Factoring and Multiplying Polynomials are inverse operations



y^4+11y^2+30
x^2-3x-4
TRINOMIALS
$z^2+5zy+6y^2$
$m^2-8m+16$

Simple Trinomials

- has three terms with the form...

$$ax^2 + bx + c$$

- a simple trinomial has an "a" value of 1.

- we use a method of inspection to factor them.

CHECK IT OUT!!!

INSPECTION METHOD

- here's how it goes... "What two numbers?"

add to get middle

$$ax^2 + bx + c$$

Multiplies to get "c" last

EXAMPLES...

1) $x^2 + 13x - 48$

b, c

Sign on largest factor

different

last multiply

-48

add

+13

-1 x +48

-2 x +24

-3 x +16

-4 x +12

-6 x +8

SOLUTIONS

$(x-3)(x+16)$

Multiply Integers

$(-) \times (-) = +$

$(+) \times (+) = +$

Same in sign $\Rightarrow +$

different

$(-) \times (+) = -$

Adding rules

$(+) + (+) = (+)$

$(+) + (-)$

different

What's the difference

keep sign

Work

sign on largest ↓ different ↓

1. x^2+1x-6

Find two numbers that

multiply Last to give -6.

middle

add: to give +1

-1×6

-2×3

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

How does this compare to the factoring of four term polynomials?????

$x^2 + 1x - 6$

$x^2 - 2x + 3x - 6$

GCF GCF

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

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

$x^2+4x-21$

Sign on largest factor

↔ different

last Mult	Middle Add
-21	
-1×21	
-3×7	

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

or

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

Another Example

$x^2 - 10x - 24$

different

Sign on larges

Last Multiply

Middle Add

-24 -10

$+1 \quad x-24$

$+2 \quad x-12$

$+3 \quad x-8$

$+4 \quad x-6$

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

Another way to look at it:

1. x^2+1x-6

What numbers multiply to give -6?

list factors of 6:
1 x 6

2 x 3

What pair of factors could add together to get 1?

-1 + -6	-1 + +6	+1 + -6	1 + 6
-2 + -3	-2 + 3	2 + -3	2 + 3

too much work

See next page for rules!!!!!!!!

Rules of the road...

Study Rules of Signs

x^2-5x+6

Sign of the biggest number.

Signs are the same.

x^2+5x-6

Sign of the biggest number.

Signs are different.

x^2+5x-6

Sign of the biggest number.

Signs are differen t.

So must be

only pair that works

-2 +3

$(x-1)(x+6)$ are your factors

-1x+6
-2 x+3

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

Always check if a GCF can be factored out

$2x^2 - 20x + 42$

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

Simple trinomial

Last Mult	middle Add
+21	-10
-1 x -21	
-3 x -7	

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

Factor Each of the following:

(Finish For homework)

Quiz Tuesday

1. $x^2 - 14x + 45$	2. $x^2 + 17x + 60$
3. $x^2 - 18x + 80$	4. $x^2 - 10x + 16$
5. $x^2 - 6x + 9$	6. $x^2 - 7x + 6$
7. $x^2 + 20x + 99$	8. $x^2 + 3x - 18$
9. $x^2 - 3x - 88$	10. $x^2 - 16x + 48$
11. $x^2 + 11x + 30$	12. $x^2 - 14x + 33$
13. $x^2 + x - 30$	14. $x^2 - 3x - 70$
15. $x^2 + 8x - 9$	16. $x^2 - 16x + 55$
17. $x^2 + 6x - 72$	18. $x^2 + 5x - 50$
19. $x^2 + 10x + 24$	20. $x^2 + 6x - 16$

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7. $x^2 + 20x + 99$	8. $x^2 + 3x - 18$
9. $x^2 - 3x - 88$	10. $x^2 - 16x + 48$
11. $x^2 + 11x + 30$	12. $x^2 - 14x + 33$
13. $x^2 + x - 30$	14. $x^2 - 3x - 70$
15. $x^2 + 8x - 9$	16. $x^2 - 16x + 55$
17. $x^2 + 6x - 72$	18. $x^2 + 5x - 50$
19. $x^2 + 10x + 24$	20. $x^2 + 6x - 16$