



Quiz First then work on the following

1) Expand and Simplify

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

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

3) Find the LCM and GCF of 84, 24

Warm Up



Quiz First then work on the following

1) Expand and Simplify

$$\begin{aligned}
 & (3x+5)^2 + 4(2x+7) \\
 & (9x^2 + 15x + 15x + 25) + 8x + 28 \\
 & (9x^2 + 30x + 25) + 8x + 28 \\
 & 9x^2 + \underline{30x + 8x} + \underline{25 + 28} \\
 & 9x^2 + 38x + 53
 \end{aligned}$$

$$\begin{aligned}
 & (3x+5)(3x+5) \\
 & 9x^2 + 15x + 15x + 25
 \end{aligned}$$

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

$$8v^3w^2(3vw^9 - 2w^3 + 7v^4)$$

3) Find the LCM and GCF of 84, 24

2	84	24
2	42	12
3	21	6
	7	2

$$\text{Gcf}(84, 24) = 2 \times 2 \times 3 = 12$$

$$\text{LCM}(84, 24) = 2 \times 2 \times 3 \times 7 \times 2 = 168$$

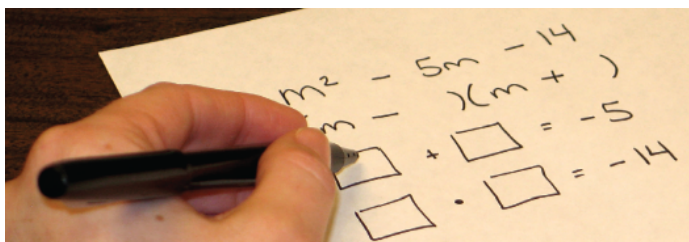


1) Expand and Simplify

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

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



$$x^2 - 3x - 4$$

$$y^4 + 11y^2 + 30$$

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?"

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Adds to get "b" *middle #*

$$ax^2 + bx + c$$

Multiplies to get "c" *last #*

EXAMPLES

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

Sign on larger factor

different sign on factor

last multiply

-48

Middle add

+13

- 1 x + 48*
- 2 x + 24*
- 3 x + 16*
- 4 x + 12*
- 6 x + 8*

SOLUTIONS

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(x - 3) (x + 16)

$$x^2 + bx + c$$

↑
Sign on larger factor

↑
Sign on both factors are the same

$$x^2 - bx - c$$

↑
Sign on larger factor

↑
the Sign on factors are different (+) · (-)

Work

1. $x^2 + 1x - 6$

sign
on
largest
factor

multiply
to give -6.

Find two numbers
that

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

multiply last	Add middle
-6	+1
-1x + 6	
-2x + 3	



add:
to give 1

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

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

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

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

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

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

last mult -21 middle add $+4$

-1×21
 -3×7

Sign on largest
different



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

Another Example

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

↑
Sign on larger factor

signs are different

last mult } middle add

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