Bell Ringer

Thursday 9/19

Use the following to answer the questions: $3x - 4x^3 + 7 + 4x^2 - x^4$

Standard form: $-x^4 - 4x^3 + 4x^2 + 3x + 7$

Degree: 4th

Leading Coefficient: -1

Classification: Polynomial

$3x^2 + 4$

2.4 online hw due today

Factor by grouping ws due tomorrow
skip #13

Make a list of factors for each number.

1. 42

1 · 42
2 · 21
3 · 14
6 · 7

2. 28

1 · 28
2 · 14
4 · 7

3. 90

1 · 90
2 · 45
3 · 30
5 · 18
6 · 15
9 · 10

Review from yesterday...

$4x^3 + x^2 + 8x + 2$

$x^2(4x+1) + 2(4x+1)$

$(4x+1)(x^2+2)$

$x^3 + 5x^2 + 3x + 15$

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

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

Essential Question:
How can I factor and solve a trinomial?

( )( ) = ___ ± ___ ± ___

Standard Form: $ax^2 + bx + c$

$2x^2 + 6x + 9$

a = 2 b = 6 c = 9

$x^2 - 5x + 11$

a = 1 b = -5 c = 11

$-x^2 + x - 7$

a = -1 b = 1 c = -7

$3x^2 - 6x - 4$

a = 3 b = -6 c = -4

I do How to factor a trinomial:

1 - Put in standard form ✓

2 - Multiply a and c ✓

3 - Find factors of ac that add to b ✓

4 - Rewrite trinomial by splitting b into the two factors found in step 3

5 - Factor by grouping :)

$x^2 + 7x + 6$

1 × 6 = 6

1 + 6 = 7

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

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

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

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

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

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

$x^2 + 7x + 6$

How would we solve $x^2 + 7x + 6 = 0$

$(x+1)(x+6) = 0$

$x+1=0$ $\quad$ $x+6=0$

$x=-1$ $\quad$ $x=-6$

We do How to factor a trinomial:

1 - Put in standard form ✓

2 - Multiply a and c ✓

3 - Find factors of ac that add to b ✓

4 - Rewrite trinomial by splitting b into the two factors found in step 3 ✓

$x^2-3x+7x-21$

5 - Factor by grouping :)

$x^2+7x-3x-21$

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

$(x+7)(x-3)=0$

$(x-3)(x+7)=0$

$x+7=0$ $\quad -7\ -7$ $\quad x=-7$

$x-3=0$ $\quad +3\ +3$ $\quad x=3$

$x^2+4x-21=0$

-21

$+21 \quad -1 \quad = 20$

$* \quad +7 \quad -3 \quad = 4$

$+3 \quad -7 \quad = -4$

How would we solve $x^2 + 4x - 21 = 0$

Do w partner

How to factor a trinomial:

1 - Put in standard form ✓

2 - Multiply a and c ✓

3 - Find factors of ac that add to b ✓

4 - Rewrite trinomial by splitting b into the two factors found in step 3 ✓

5 - Factor by grouping :)

$1x^2 + 9x + 8 = 0$

$x^2 + 1x + 8x + 8$

$x(x+1) + 8(x+1)$

$(x+1)(x+8) = 0$

$x+1=0$ $x+8=0$

How would we solve $x^2 + 9x = -8$

$+8$

$x^2+9x+8=0$

$(\quad)(\quad)=0$

By yourself

How to factor a trinomial:

1 - Put in standard form ✓

2 - Multiply a and c ✓

3 - Find factors of ac that add to b ✓

4 - Rewrite trinomial by splitting b into the two factors found in step 3 ✓

5 - Factor by grouping :)

$1x^2 - 14x + 24$

24

$-1 \quad -24$

$-2 \quad -12$

$-3 \quad -8$

$-4 \quad -6$

$x^2 - 2x - 12x + 24$

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

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

How would we solve $x^2 - 14x = -24$

Did we notice any kind of shortcut?

I do How to factor a trinomial:

1 - Put in standard form ✓

2 - Multiply a and c

3 - Find factors of ac that add to b

4 - Rewrite trinomial by splitting b into the two factors found in step 3

5 - Factor by grouping :)

$-42 + v^2 - v$

$1v^2 - 1v - 42$

$-7 \cdot +6 = -42$ BIGGER

$+1$	$-42 = -41$
$+2$	$-21 = -19$
$+3$	$-14 = -11$
$+6$	$-7 = -1$

$(v + 6)(v - 7)$

We do How to factor a trinomial:

1 - Put in standard form

2 - Multiply a and c

3 - Find factors of ac that add to b

4 - Rewrite trinomial by splitting b into the two factors found in step 3

5 - Factor by grouping :)

$$-4w + 3 + w^2$$

w/ partner

How to factor a trinomial:

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

1 - Put in standard form

2 - Multiply a and c

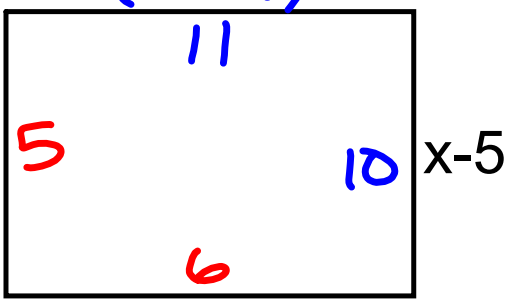
3 - Find factors of ac that add to b

4 - Rewrite trinomial by splitting b into the two factors found in step 3

5 - Factor by grouping :)

Area = $x^2 - 9x + 20$

$(x-4)$



A) What expression represents the length of the rectangle?

$+20$

$-4 \quad -5$

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

B) Find the perimeter when x = 10

$P = 22$

C) Find the dimensions of the rectangle if area is 110 ft^2

$x^2 - 9x + 20 = 110$

$-110 \quad -110$

$x^2 - 9x - 90 = 0$

$(x+6)(x-15) = 0$

$x+6=0 \quad -6 \quad -6$

$x = -6$

$x-15=0 \quad +15 \quad +15$

$x = 15$

-90

$1 \quad -90$

$2 \quad -45$

$3 \quad -30$

$5 \quad -18$

$6 \quad -15$

due Monday

*update your packet as you go!

2.5 Day 1 hw pg 93-94 #s 1, 3, 7, 9, 13, 17, 21, 25, 29, 33, 44