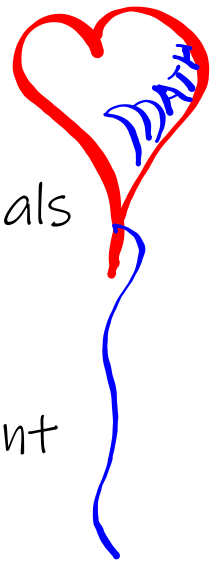
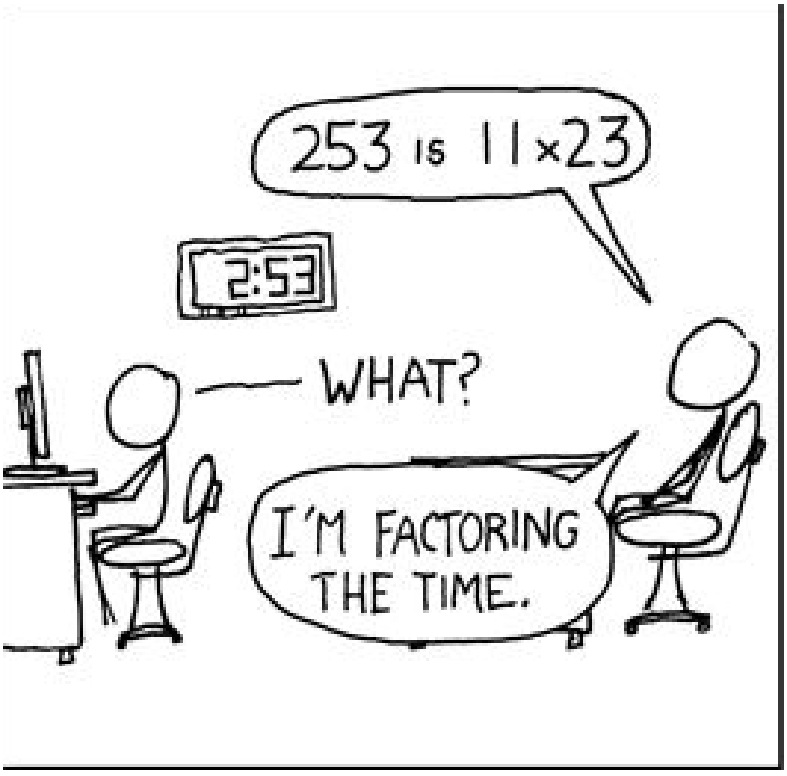
Good morning!

1. "Here"
2. Notes on factoring trinomials
3. Practice p. 11 to CTLS
4. Bonus Factoring Assignment




253 IS 11×23
2:53
WHAT?
I'M FACTORING THE TIME.

Factoring by GCF Practice

Directions: For the following problems, factor by finding and factoring out the greatest common factor.

1) $4x - 14$

2) $-4x + 5$

3) $20x^2 - 30y$

4) $10xy - 7y^2$

5) $6x^2y - 18xy$

6) $x^2y^2 - 4x$

7) $18x^5 + 2x^4 + 2x^3$

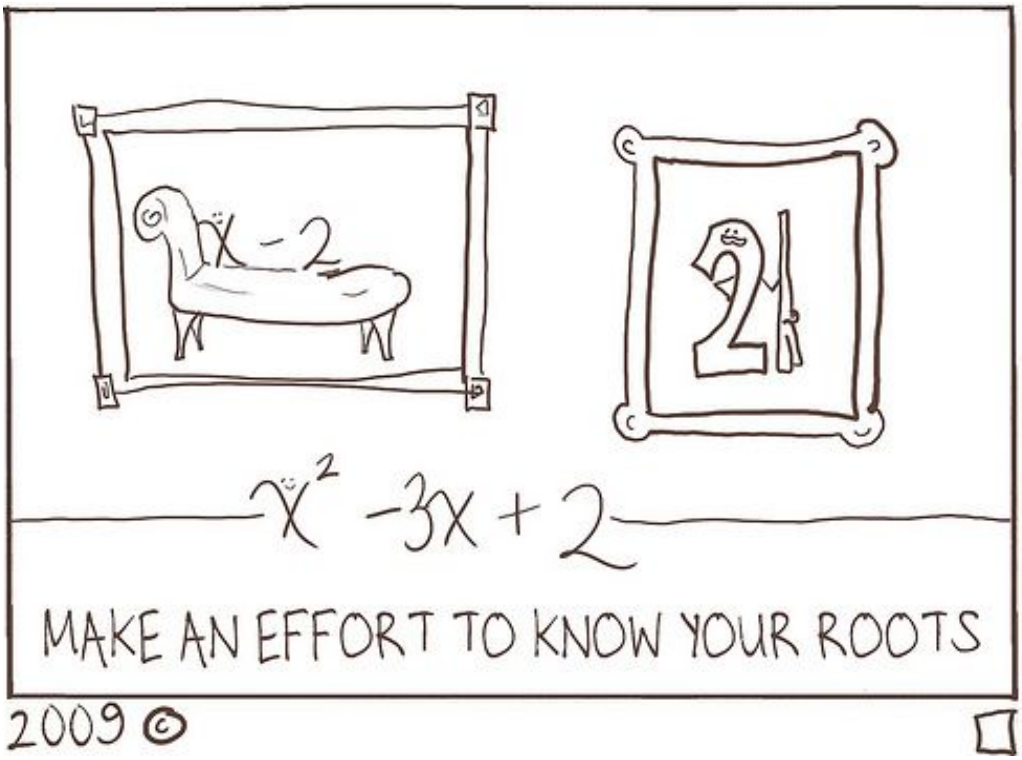
8) $3r^5 + 5r^3 - 9r^2$

9) $20x^2 + 6x^2y^2 + 4xy^2$

10) $10x^4y^6 + 3x^4y^4 - x$

11) $-25x^6 + 5x^4 - 40x^3$

12) $63x^2y^2 - 18x^2$


x - 2
21
$x^2 - 3x + 2$
MAKE AN EFFORT TO KNOW YOUR ROOTS
2009 ©

Where do Tadpoles in the Pawn Shop Come From?

Factor each polynomial below as the product of its greatest monomial factor and another polynomial. Find your answer and notice the letter next to it. Write this letter in each box that contains the number of that exercise.

1) $3x^2 + 18x + 9$
2) $2x^2 + 10x + 12$
3) $7x^2 + 14x + 35$
4) $5x^2 - 20x + 10$
5) $6x^2 + 9x - 21$
6) $n^3 + n^2 + n$
7) $n^4 - n^3 + n^2$
8) $2n^3 - n^2 - 5n$
9) $3n^2 + 9n$
10) $7n^2 - 28n$
11) $4k^3 - 32k$
12) $6k^3 + 10k^2$
13) $5k^3 + 15k^2 + 10k$
14) $4k^3 - 20k^2 + 4$
15) $4k^4 + 18k^3 - 6k^2$

Answers:

D) $3(2x^2 + 3x - 7)$
L) $3(2x^2 + 4x - 5)$
A) $3(x^2 + 6x + 3)$
P) $5(x^2 - 2x + 5)$
F) $5(x^2 - 4x + 2)$
O) $2(x^2 + 5x + 6)$
B) $7(x^2 + x + 6)$
E) $7(x^2 + 2x + 5)$

Answers:

S) $n(2n^2 - 2n - 6)$
O) $n^2(n^2 - n + 1)$
I) $7n(n + 5)$
F) $3n(n + 3)$
E) $n^2(n^2 - 2n + 3)$
A) $n(n^2 + n + 1)$
M) $n(2n^2 - n - 5)$
R) $7n(n - 4)$

Answers:

P) $4(k^3 - 5k^2 + 1)$
R) $5k(k^2 + 3k + 2)$
S) $4(k^3 - 8k^2 + 2)$
G) $4k(k^2 - 8)$
L) $5k(k^2 + 4k + 1)$
W) $2k^2(2k^2 + 9k - 3)$
T) $2k^2(3k - 9)$
N) $2k^2(3k + 5)$

4	10	2	8	1	9	13	7	11	14	6	15	12	3	5

From a frog pond

+ = (-)(-) - = (+)(-)
+ = (+)(+) - = (-)(+)

Diamond Math Problems

Complete the diamond problems. The top cell contains the **product** of the numbers in the left and right cells, while the bottom contains the **sum**.

(1) 21 / 10 — 7 × 3 = 21; 7 + 3 = 10

(2) -48 / -8 — -12 × +4

(3) -18 / 7 — 9 × -2

(4) 60 / 16 — 10 × 6

(5) 150 / -25 — -10 × -15

(6) 66 / -17 — -11 × -6

(7) -32 / 4 — 8 × -4

(8) 126 / -23 — -9 × -14

(9) 88 / 19 — 11 × 8

(10) -14 / 5 — 7 × -2

(11) 90 / 19 — 10 × 9

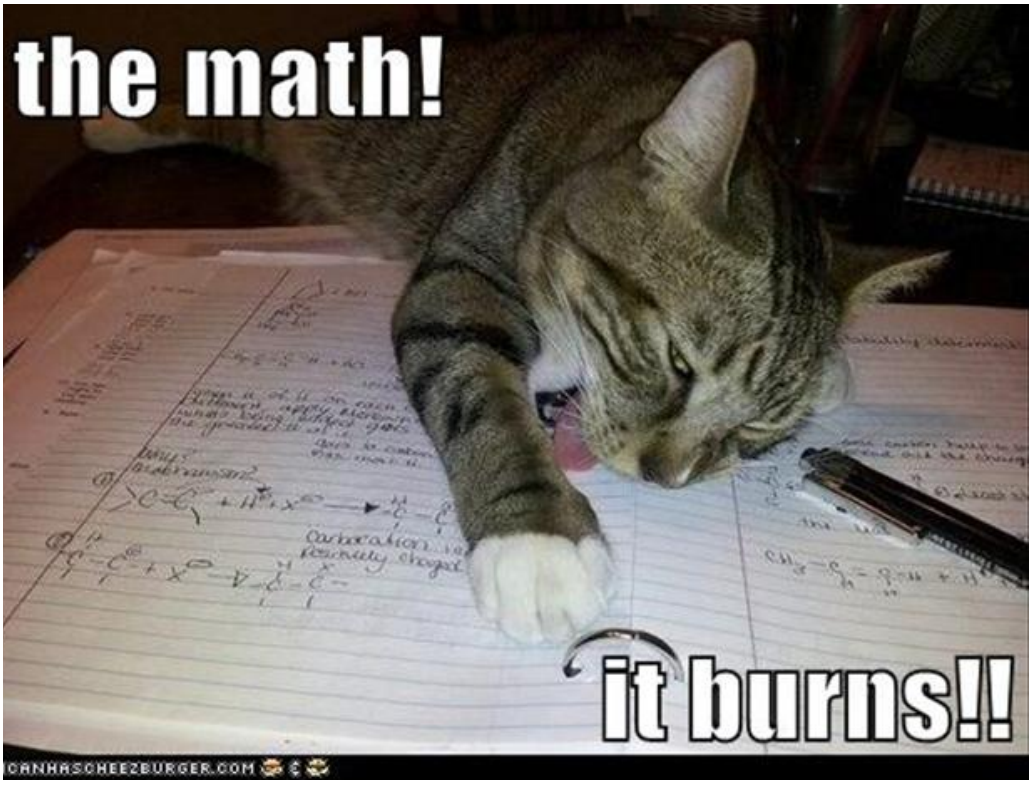
(12) -16 / -6 — 2 × -8

(13) 30 / 13 — 10 × 3

(14) -81 / 0 — -9 × 9

(15) 99 / -20 — -9 × -11

(16) 99 / 20 — 9 × 11


the math!
it burns!!
CANHASCHEEZBURGER.COM

ax^2+bx+c : Standard form

$a=1 \quad b=-4 \quad c=-32$

Factoring Trinomials

Example: $x^2 - 4x - 32$

Steps (written out)	Steps (worked out)
1) Multiply *a* and *c* together. Place that number in the ~~bottom~~ top of the x. Place *b* in the ~~top~~ bottom of the x. Find two numbers that **multiply** to get the ~~bottom~~ top number and **add** to get the ~~top~~ bottom number.	a·c: -32 -32 $4 \quad -8$ -4 -32: $1, 32$; $2, 16$; $4, -8$
2) Create a 2x2 box and place the first term of your **original** binomial in the first box. Place the last term of your **original** binomial in the last box. Fill in the remaining 2 boxes with the numbers on the left and right of your x from above. Be sure to place an x after each number.	$x \quad +4$ x: x^2, $4x$ -8: $-8x$, -32
3) Find the GCF of each row and column and write it in the corresponding area. Write these as the two binomials for the factored form.	
4) Check you work by multiplying the binomials together to see if you get your original trinomial.	Factored Form: $(x+4)(x-8)$

ax^2+bx+c

Example: $5v^2 + 27v + 10$ $\quad a=5 \quad b=27 \quad c=10$

Steps (written out)	Steps (worked out)
1) Multiply *a* and *c* together. Place that number in the ~~bottom~~ top of the x. Place *b* in the ~~top~~ bottom of the x. Find two numbers that **multiply** to get the ~~bottom~~ top number and **add** to get the ~~top~~ bottom number.	a·c: $5(10)$ 50 $2v \quad 25v$ 27 50: $1, 50$; $2, 25$; $5, 10$
2) Create a 2x2 box and place the first term of your **original** binomial in the first box. Place the last term of your **original** binomial in the last box. Fill in the remaining 2 boxes with the numbers on the left and right of your x from above. Be sure to place an x after each number.	$5v \quad +2$ v: $5v^2$, $2v$ $+5$: $25v$, 10
3) Find the GCF of each row and column and write it in the corresponding area. Write these as the two binomials for the factored form.	
4) Check you work by multiplying the binomials together to see if you get your original trinomial.	Factored Form: $(v+5)(5v+2)$

$(v+5)(5v+2)$

	v	$+5$
$5v$	$5v^2$	$25v$
$+2$	$2v$	10

$5v^2+27v+10$

$(x+4)(x-8)$

	$x+4$
x	x^2 | $4x$
-8	$-8x$ | -32

$x^2 - 4x - 32$


TRYING TO STAY POSITIVE
VIA 9GAG.COM
FACTORING TRINOMIALS
memegenerator.net

11

1) $3x^2 + 8x + 5$

2) $4a^2 - a - 5$

ax^2+bx+c

$a=4, b=-1, c=-5$

-20

$4a^2$ $-5a$ -1

-20: $1|20$, $2|10$, $4|5$

$a+1$

$4a$ | $4a^2$ | $4a$

-5 | $-5a$ | -5

$(a+1)(4a-5)$

3) $4x^2 - 11x + 6$

4) $3x^2 + 17x + 10$

5) $6x^2 - 5x - 1$

6) $2m^2 + 5m + 2$

7) $6m^2 - 11m - 10$

8) $4v^2 - v - 14$

Factoring – Special Cases

When factoring quadratics, there are two types of special cases.

Difference of Two Squares $(x^2 - a^2) = (x + a)(x - a)$

Perfect Square Trinomials $((ax)^2 + 2abx + b^2) = (ax + b)^2$

$((ax)^2 - 2abx + b^2) = (ax - b)^2$

When factoring quadratics that are special cases, you can still factor in the same way that we have previously done. The only difference is that you may have to add a 0 term in your expression or change the way you write final answer.

1) $x^2 + 12x + 36$

2) $x^2 - 9$

3) $4x^2 - 25$

4) $4x^2 - 16x + 16$

5) $x^2 + 20x + 100$

6) $9x^2 - 16y^2$