Forms

(A) $\frac{1}{4}(8x+4y-16z)$

(B) $2x+y-4z$

Are (A) and (B) the same?

Yes (A) $\frac{1}{4}(8x+4y-16z)$

$\hookrightarrow 2x+y-4z$

Distributive property:

$$a\cdot(b+c)=a\cdot b+a\cdot c$$

FOIL

$(a+b)(x+y)=(a+b)\cdot x$

$(a+b)(x+y) = (a+b)\cdot x + (a+b)\cdot y$

a

$ax + bx + ay + by$

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

$= x^2 - 1x - 6$

$x + x = 2x$

$x \cdot x = x^2$

Expand

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

$= x^2 - 9$

$(x + y + z)(x + 3)$

3 2

$x^2 + 3x + xy + 3y + xz + 3z$

6 terms

Practice:

$(x+1)(x+2) = x^2 + 3x + 2$

$(x+3)(x+4) = x^2 + 7x + 12$

$(x+4)(x+6) = x^2 + 10x + 24$

$(x-5)(x+7) = x^2+2x-35$

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

① $(-2x-6)(x+2)$

↳ $-2xx-4x-6x-12$

$-2x^2-10x-12$

② FOIL first

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

$-2x^2-4x-6x-12$

$-2x-10x-12$

$-(x-x^2+2) = -1\cdot(x-x^2+2)$

$\stackrel{!}{=} -x+x^2-2$

a, b are any #'s

$(x+a)(x+b) = x^2+ax+bx$

$(x+a)(x+b) = x^2 + ax + bx + ab$

$$x^2 + (a+b)\cdot x + a\cdot b$$

$(1x+30)(1x-5)$

$$= x^2 + 25x + -150$$

$b = -a$

$(1x+a)(1x-a) =$

$$x^2 + ax - ax - a^2$$

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

$(x+5)(x-5) = x^2 - 25$

$(x-9)(x+9) = x^2 - 81$

$(x+5)(x-5) = x^2 - 25$.

Q: to think about:

what is

$(100,011) \times (99,989)$