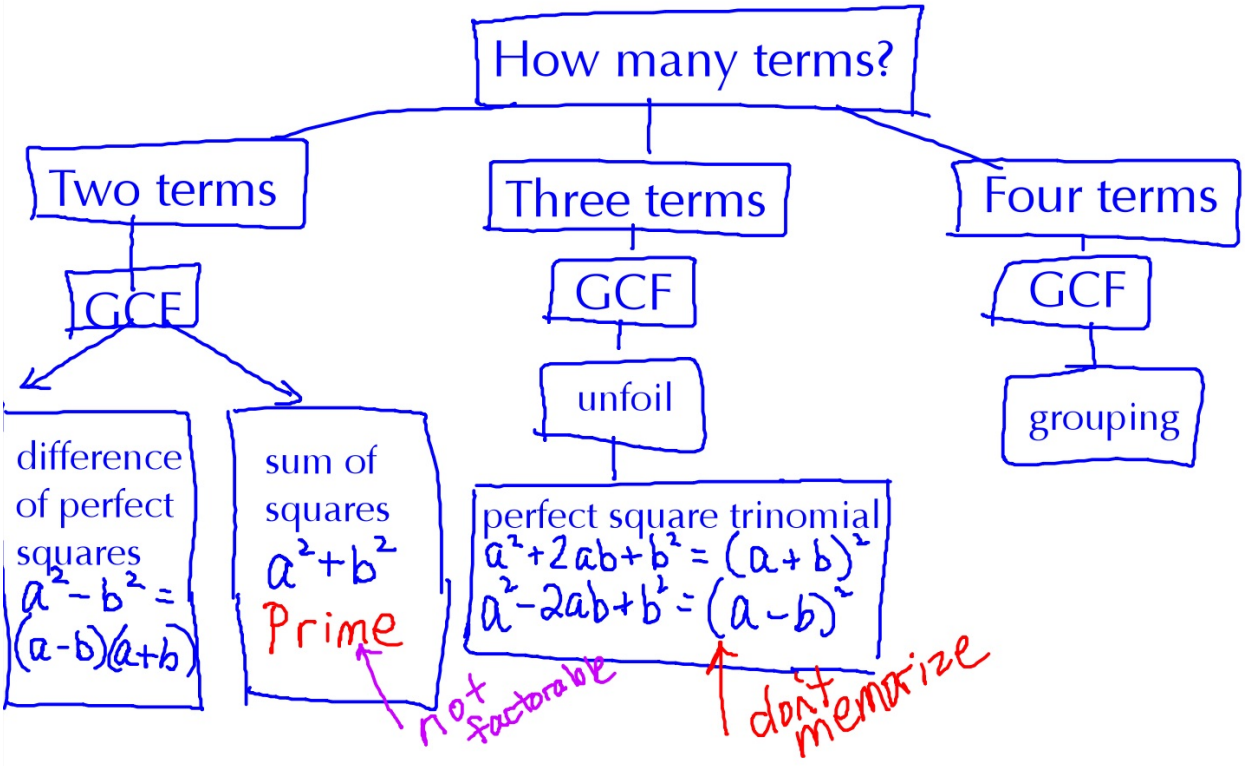
Factoring Bootcamp



Factor completely

a.) $x^2 - 49 = (x+7)(x-7)$

b.) $x^2 - 16 = (x-4)(x+4)$

c.) $4y^2 - 1 = (2y+1)(2y-1)$

d.) $2x^2 - 50 = 2(x^2 - 25) = 2(x+5)(x-5)$

e.) $144 - x^2 = (12-x)(12+x)$

or

$-(x^2 - 144) = -(x+12)(x-12)$

$x+a$ and $x-a$ are conjugate pairs

f.) $x^4 - 81 = (x^2 - 9)(x^2 + 9)$

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

g.) $12x^3 + 2x^2 - 30x - 5$

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

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

h.) $9x^3 - 9x^2 - 4x + 4$

$9x^2(x-1) - 4(x-1)$

$(x-1)(9x^2-4)$

$(x-1)(3x+2)(3x-2)$

i.) $x^2 - 10x + 9$

$(x-9)(x-1)$

both factors have same sign

j.) $x^2 - 2x - 8$

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

factors will have different signs

k.) $x^2 - 9x + 10$

Prime

l) $2x^2 + 17x + 21$

$(2x + 3)(1x + 7)$

$2 \times 3 = 6$ $\quad$ $1 \times 7 = 7$

$2 \times 7 = 14$ $\quad$ $1 \times 3 = 3$ ✓

m.) $5x^2 - x - 18$

$(5x + 9)(x - 2)$

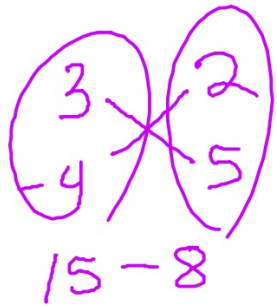
5×1

$+9 \times -2$

$10 + 9 = 19$

$10 - 9 = 1$

n) $6x^2 + 7x - 20$



$15 - 8$

$(3x - 4)(2x + 5)$

a.) $x^2 - 10x + 25$

$(x-5)(x-5)$ or $(x-5)^2$

b.) $4x^2 + 4x + 1$

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