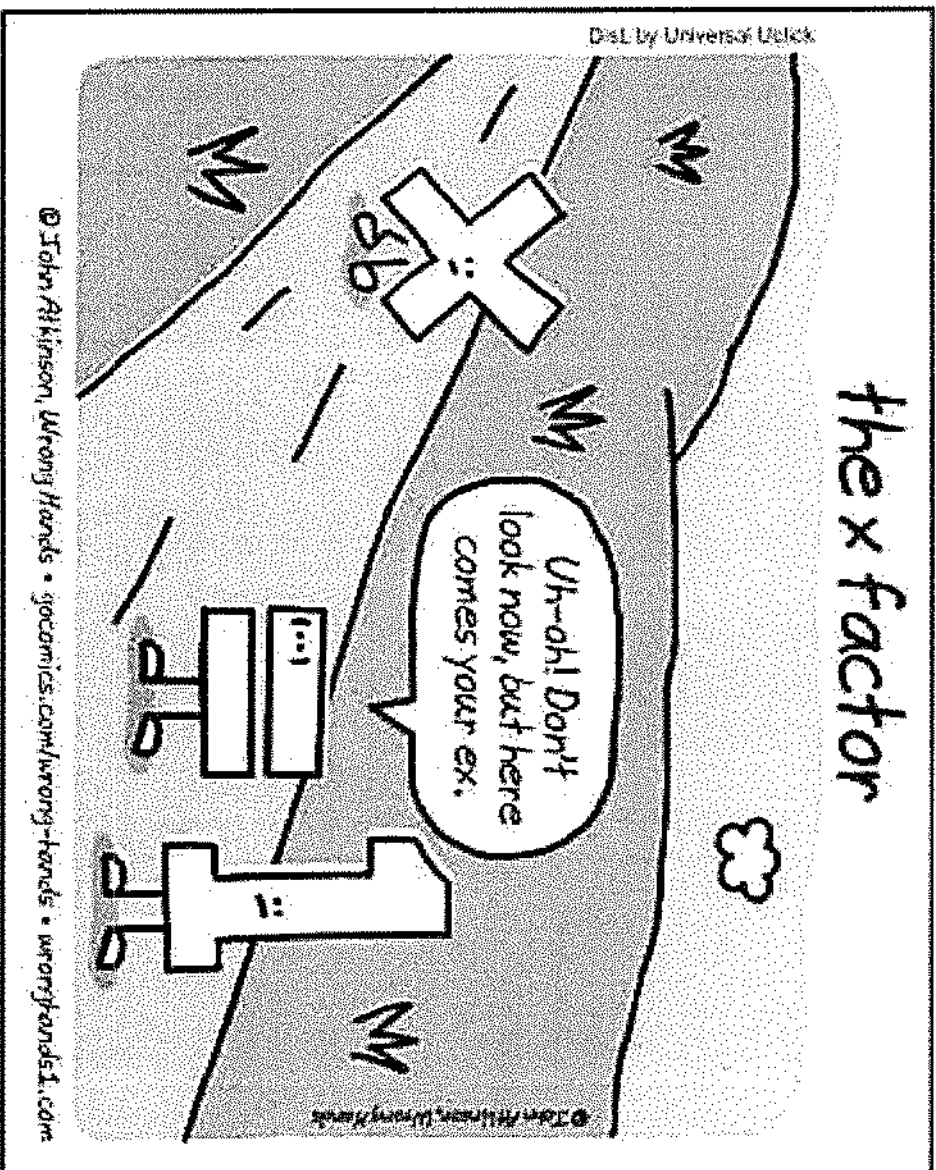


Factoring $x^2 + bx + c$ ($a = 1$)

(Day 2)

$a=1$

Notes



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Trinomial
= 3 terms

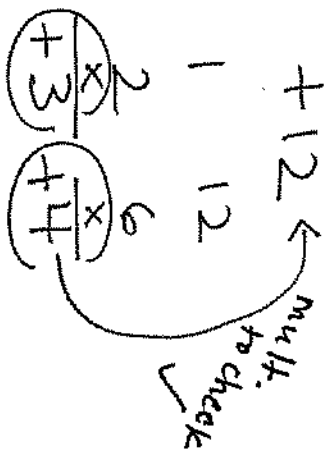
$$aX^2 + bX + c$$

"Unfoil"
() ()

To factor a trinomial of the form above, you must find two integers that MULTIPLY TO C, AND ADD UP TO B.

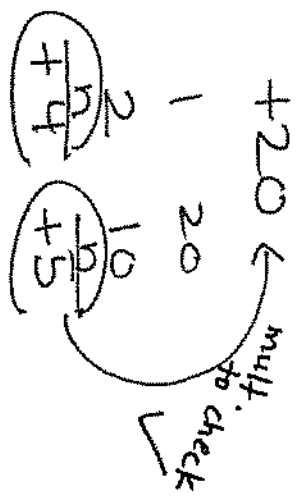
no gcf

a) $1x^2 + 7x + 12$
 $(x+3)(x+4)$



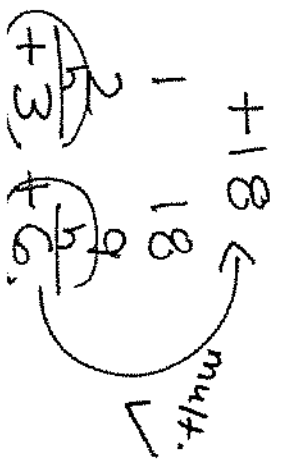
no gcf

b) $1n^2 + 9n + 20$
 $(n+4)(n+5)$



no gcf

c) $1h^2 + 9h + 18$
 $(h+3)(h+6)$



$$d) a^2 + 10a + 24$$

$$e) k^2 + 6k + 5$$

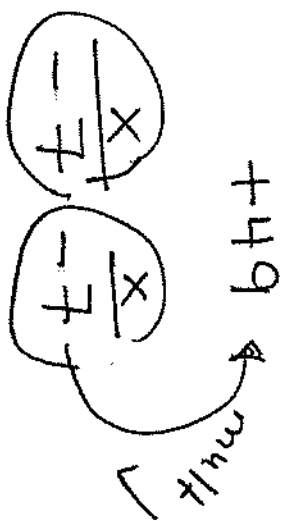
$$f) y^2 + 2y + 1$$

no gcf

$$g) x^2 - 14x + 49$$

$$(x-7)(x-7)$$

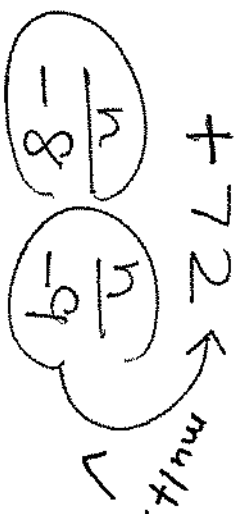
$$(x-7)^2$$



no gcf

$$h) n^2 - 17n + 72$$

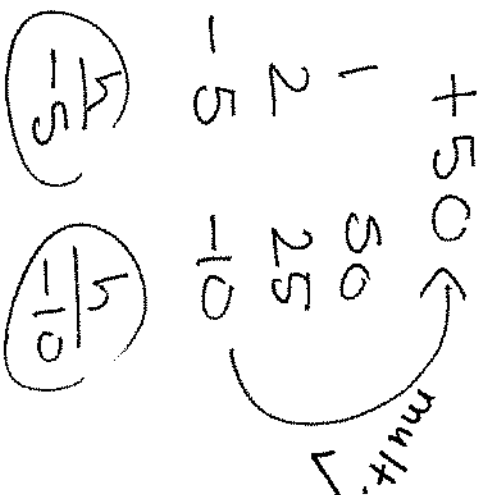
$$(n-8)(n-9)$$



no gcf

$$i) h^2 - 15h + 50$$

$$(h-5)(h-10)$$



$$j) a^2 - 16a + 48$$

$$k) k^2 - 3k + 2$$

$$l) y^2 - 17y + 70$$

no gcf

$$m) x^2 + 3x - 18$$

$$(x-3)(x+6)$$

no gcf

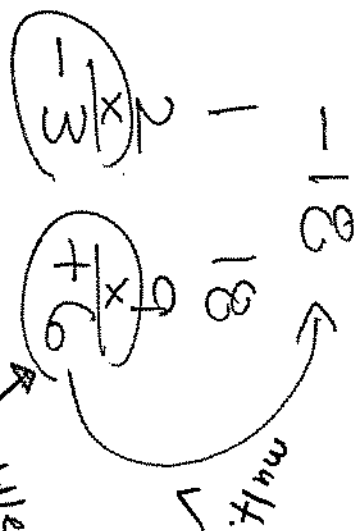
$$n) n^2 + 2n - 8$$

$$(n-2)(n+4)$$

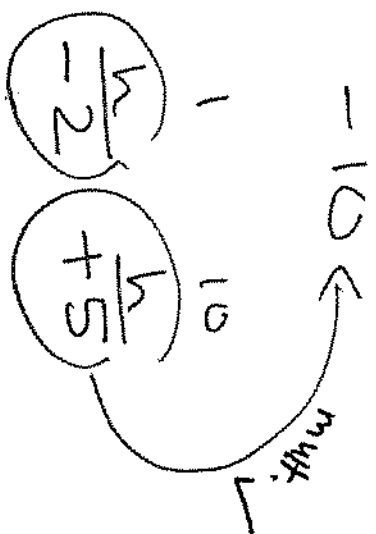
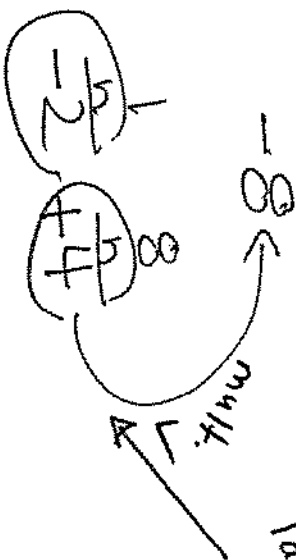
no gcf

$$o) h^2 + 3h - 10$$

$$(h-2)(h+5)$$



Middle term is positive, numbers larger should be positive.



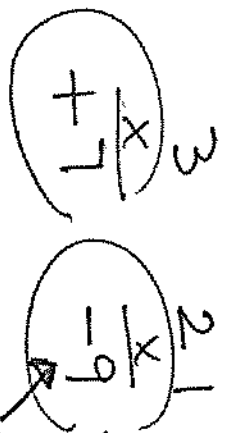
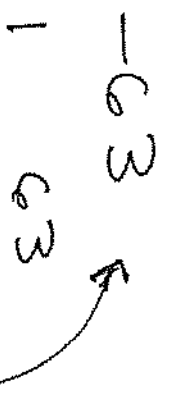
$$p) a^2 + 3a - 54$$

$$q) k^2 + 4k - 45$$

$$r) y^2 + 3y - 28$$

no gcf
 s) $x^2 - 2x - 63$

$(x+7)(x-9)$



middle term is
 negative,
 larger number
 should be negative.

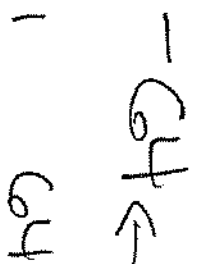
no gcf
 t) $n^2 - 2n - 3$

$(n+1)(n-3)$



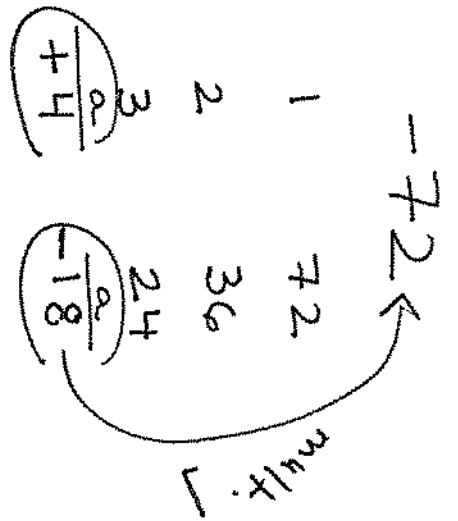
no gcf
 u) $h^2 - 12h - 64$

$(h+4)(h-16)$



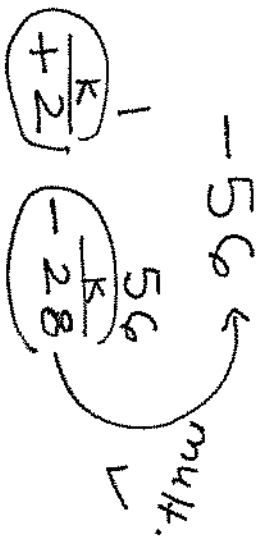
no gcf
 $v) a^2 - 14a - 72$

$(a+4)(a-18)$



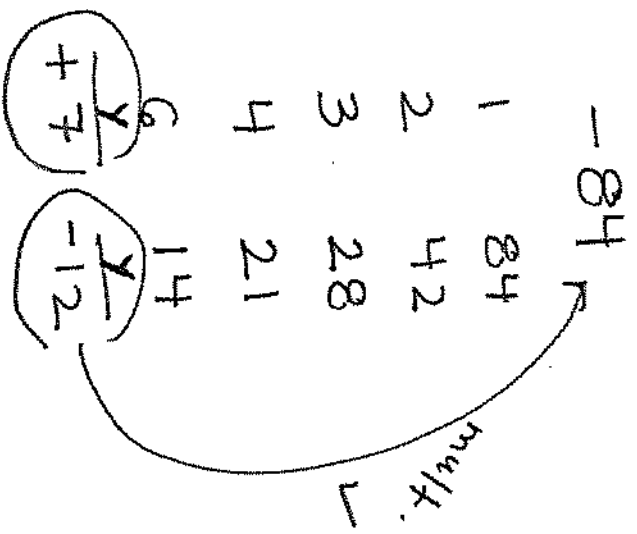
no gcf
 $w) k^2 - 26k - 56$

$(k+2)(k-28)$



no gcf
 $x) y^2 - 5y - 84$

$(y+7)(y-12)$



2 Variables

coeff Y) $| X^2 - 7XY - 18Y^2$

$(X+2Y)(X-9Y)$

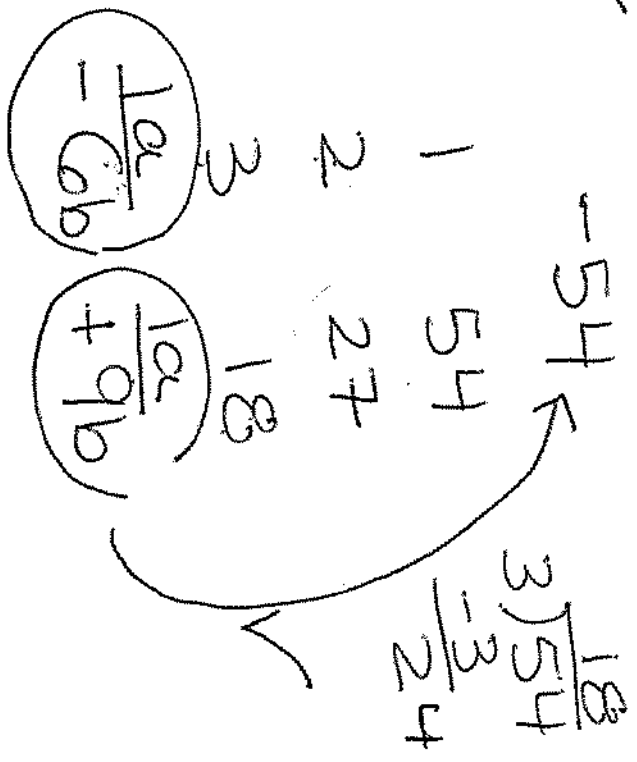
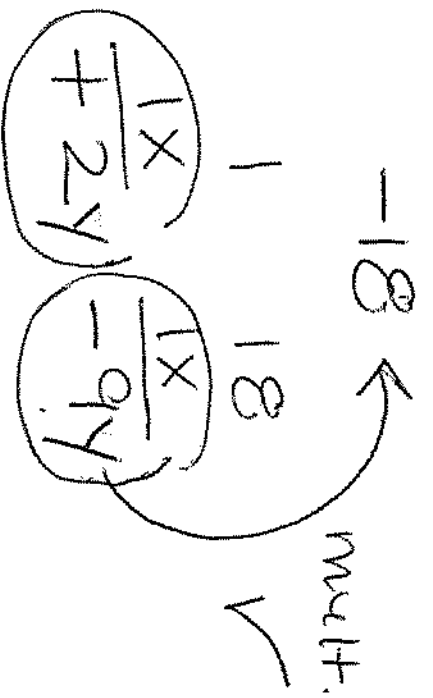
fail to check :

$X^2 - 9XY + 2XY - 18Y^2$

$X^2 - 7XY - 18Y^2 \checkmark$

Z) $| a^2 + 3ab - 54b^2$

$(a-6b)(a+9b)$



Factor out a GCF first!!!

$$1) \frac{4y^2}{4} + \frac{12y}{4} + \frac{8}{4} = 4 \stackrel{\text{gcf}}{\downarrow} (y^2 + 3y + 2)$$

$\left(\frac{1y}{+1}\right) \quad \left(\frac{1y}{+2}\right)$

+2 ←

$$2) \frac{2x^2}{2} - \frac{8x}{2} - \frac{24}{2} = 2 \stackrel{\text{gcf}}{\downarrow} (x^2 - 4x - 12)$$

$\left(\frac{1x}{+2}\right) \quad \left(\frac{1x}{-6}\right)$

1 12

-12 ←

$$3) \frac{3c^2}{3} - \frac{15c}{3} + \frac{12}{3} = 3 \stackrel{\text{gcf}}{\downarrow} (c^2 - 5c + 4)$$

$\left(\frac{1c}{-1}\right) \quad \left(\frac{1c}{-4}\right)$

+4 ←

$$= 4(y+1)(y+2)$$

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

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

$$= 3(c-4)(c-1)$$

$$= 3(c-1)(c-4)$$

$$4) 3a^2 + 30a + 63a$$

$$5) 2b^2 + 10a + 12$$

$$6) 5x^2 - 15x - 140$$