FACTORING "OVERALL"

① COMBINE ANY LIKE terms, PUT IN "ORDER", PULL-OUT GCF.

② LOOK FOR ONE OF 3 SPECIAL PATTERNS.

$\Rightarrow a^2 \pm 2ab + b^2 = (a \pm b)(a \pm b)$

CHECK 1ST — CHECK LAST — CHECK 2ND

$\Rightarrow a^2 - b^2 = (a+b)(a-b)$

③ FACTOR USING "magic number" TECHNIQUE

$x^2 + bx + c$

SUM = b
PROD = c
m N
$(x+m)(x+N)$

$ax^2 + bx + c \quad a \neq 1$

SUM = b
PROD = $a \cdot c$
m N
$(ax^2 + mx) + (Nx + c)$ ← SPLIT AND FBG
GCF(L + r) + GCF(L + r)
(L + r)(G + 6)

④ If you CANNOT FACTOR, USE THE Q.F.

discriminant = $d = b^2 - 4ac$

$$x = \left\{ \frac{-b + \sqrt{d}}{2a}, \frac{-b - \sqrt{d}}{2a} \right\}$$

NOTES: ① d is negative, NO SOLUTION
② if you have 4 or more terms, try FBG