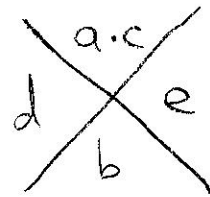


# Factoring $ax^2 + bx + c$ when $a \neq 1$ using the "ac grouping method."

- ① Find  $a \cdot c$
- ② Factor  $a \cdot c$  into  $d \cdot e$   
so that  $\rightarrow d + e = b$
- ③ Rewrite polynomial as  
 $ax^2 + dx + ex + c$
- ④ Factor by Grouping + Solve



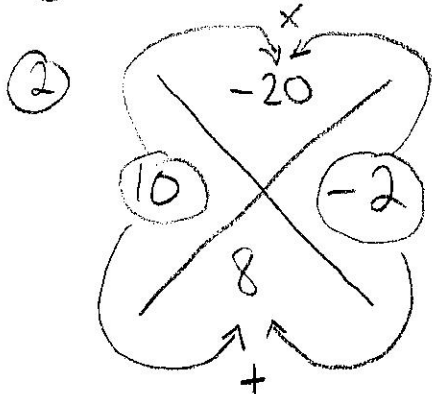
Class Example:  $5k^2 + 3k - 1 = 3 - 5k$  (p. 259 #12)

$$\begin{array}{r} 5k^2 + 3k - 1 = 3 - 5k \\ +5k - 3 \quad -3 + 5k \\ \hline 5k^2 + 8k - 4 = 0 \end{array}$$

← Set equation = to zero

$$\begin{array}{ccc} a & b & c \\ 5k^2 + 8k - 4 \end{array}$$

①  $a \cdot c = 5(-4) = -20$



③  $5k^2 + 10k - 2k - 4 = 0$

④  $5k^2 + 10k - 2k - 4 = 0$   
 $5k(k+2) - 2(k+2) = 0$   
 $(k+2)(5k-2) = 0$

$$\begin{array}{r} k+2=0 \quad \text{OR} \quad 5k-2=0 \\ \underline{-2 \quad -2} \qquad \qquad \underline{+2 \quad +2} \\ k=-2 \qquad \qquad \frac{5k}{5} = \frac{2}{5} \end{array}$$

↓

$k = -2 \quad \text{OR} \quad k = \frac{2}{5}$