$(x+5)(x+6)$

FOIL $x^2+6x+5x+30$

$x^2+11x+30$

$(x+5)(x+6)$

1, 30
2, 15
3, 10
5, 6

$(7x+5)(4x-3)$

$28x^2-21x+20x-15$

$28x^2-x-15$

1) $a \cdot c = -420$
2) $28x^2-21x+20x-15$
3) $7x(4x-3)+5(4x-3)$
4) $(7x+5)(4x-3)$

-420	1, -420
	10, -42
	20, -21
	-20, 21

③ $x^2 + 5x + 6$

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

$x^2 + 3x + 2x + 6$

$x^2 + 5x + 6$

⊕ Same Sign

⊕ addition

⊖ subtraction

$6 \begin{cases} 3 \\ 2 \end{cases}$ $6 \mid \begin{matrix} 1 & 6 \\ 2 & 3 \end{matrix} = 5$

④ $x^2 + 3x - 10$

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

Sign Different

$x^2 - 2x + 5x - 10$

$x^2 + 3x - 10$

$-1, 10$

$1, -10$

$2, -5$

$-2, 5$

$ax^2 + bx + c$

Ex 5 $3x^2 - 20x + 28$

AC Method

$3 \cdot 28 = 84$ $\quad 84 = 2 \cdot 42 = 2 \cdot 2 \cdot 21 = 2 \cdot 2 \cdot 3 \cdot 7$

84
$-1, -84$
$-2, -42$
$-4, -21$
$-7, -12$
$-6, -14$

$3x^2 - 6x - 14x + 28$

$3x(x-2) - 14(x-2)$

$(3x-14)(x-2)$

(5) $5x^2 - 14x + 8$

(1) $a \cdot c = 40$

40	$-1, -40$
	$-4, -10$

(2) $5x^2 - 10x - 4x + 8$

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

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

$5x^2 - 10x - 4x + 8$

$5x^2 - 14x + 8$

(6) $6y^2 + 19y - 7$

$a \cdot c = -42$

$6y^2 - 2y + 21y - 7$

-42	$21, -2$

$A B + C B = (A+C)B$

$2y(3y-1) + 7(3y-1)$

$(2y+7)(3y-1)$

$6y^2 - 2y + 21y - 7$

(7) $ax^2+bx+c=0$

$(x+6)(x-3)=0$

$A \cdot B = 0$

$(x+6)=0$ $(x-3)=0$

$x+6=0$ $x-3=0$

$-6\ -6$ $+3=3$

$x=-6$ $x=3$

(8) $x^2-6x=16$

$-16=-16$

$x^2-6x-16=0$

$-16 \mid -16, 1$

$-8, 2$

$(x+2)(x-8)=0$

$x=-2, 8$