

FACTORING

1. GCF

2. Grouping

3. P-S-D METHOD (Form: x^2+bx+c)

4. KEY # METHOD (Form: ax^2+bx+c)

① $x^2 + 14x + 40$
 $(x+4)(x+10)$

NOTE: LARGEST #
IN P COLUMN
IS SAME SIGN
AS MIDDLE
TERM

40

Prod.	Sum.	Diff.
1.40	41	39
2.20	22	18
4.10	14	6
5.8	13	3

S = SAME SIGNS
D = DIFF. SIGNS

② $q^2 + 6q - 72$
 $(q-6)(q+12)$

72

P	S	D
1.72	73	71
2.36	38	34
3.24	27	21
4.18	22	14
6.12	18	6
8.9	17	1

③ $-p^2 + 5p + 50$
 $-(p^2 - 5p - 50)$
 $-(p+5)(p-10)$

50

P	S	D
1.50	51	49
2.25	27	23
5.10	15	5

④ $m^2 + 13mn + 30n^2$
 $(m+3n)(m+10n)$

30

P	S	D
1.30	31	29
2.15	17	13
3.10	13	7
5.6	11	1

⑤ $3x^2 - 11x - 20$
 $3x^2 - 15x + 4x - 20$
 $3x(x-5) + 4(x-5)$
 $(x-5)(3x+4)$

$ac = 3(20) = 60$

P	S	D
1.60	61	59
2.30	32	28
3.20	23	17
4.15	19	11
5.12	17	7
6.10	16	4

⑥ $28y^2 - y - 2$

$ac = 28(-2) = -56$

$28y^2 - 8y + 7y - 2$

P	S	D
1.56	57	55
2.28	30	26
4.14	18	10
7.8	15	1

$4y(7y-2) + 1(7y-2)$

$(7y-2)(4y+1)$

⑦ $14r^2 + 39r + 10$

$ac = 14(10) = 140$

$14r^2 + 35r + 4r + 10$

$7r(2r+5) + 2(2r+5)$

$(2r+5)(7r+2)$

P	S	D
1.40	141	139
2.70	72	68
4.35	39	31
5.28	33	23
7.20	27	13
10.14	24	4

ex: $100x^2 - 500x + 600$

$100(x^2 - 5x + 6)$ GCF

$100(x-2)(x-3)$

⑧ $4m^2 - 19mn - 5n^2$

$ac = 4(5) = 20$

$4m^2 - 20mn + 1mn - 5n^2$

P	S	D
1.20	21	19
2.10	12	8
4.5	9	1

$4m(m-5n) + n(m-5n)$

$(m-5n)(4m+n)$