

FACTORING

- * 1. GCF (GREATEST COMMON FACTOR)
- 2. GROUPING (4 OR MORE TERMS)
- 3. P-S-D (FORM: $x^2 + bx + c$)
- 4. KEY # (FORM: $ax^2 + bx + c$)
- 5. DOTS (TWO TERMS WITH A MINUS BETWEEN THEM)
- 6. DIFF OF 2 CUBES (TWO TERMS WITH A MINUS BETWEEN THEM)
- 7. SUM OF 2 CUBES (TWO TERMS WITH A PLUS BETWEEN THEM)

1. $15x^7 - 20x^6 + 10x^5$
 $5x^5(3x^2 - 4x + 2)$

2. $-18x^2 - 27x$

$-9x(2x + 3)$

NOTE: IF YOUR 1ST TERM IS NEGATIVE, ALWAYS FACTOR OUT A NEGATIVE

3. $x(5x-1) - 2(5x-1)$

$(5x-1)(x-2)$

GROUPING

- * 1. TRY EQUAL GROUPS OR
- 2. REARRANGE AND TRY EQUAL GROUPS OR
- 3. TRY UNEQUAL GROUPS

4. $x^3 - 2x^2 - 7x + 14$

$x^2(x-2) - 7(x-2)$

$(x-2)(x^2-7)$

5. $x^3 + 2x^2 + 8x + 16$

$x^2(x+2) + 8(x+2)$

$(x+2)(x^2+8)$

6. $x^2 - 14x + 40$

$(x-4)(x-10)$

PSD

40

P	S	D
1.40	41	39
2.20	22	18
4.10	14	6
5.8	13	3

NOTE: LARGER # IN P

COLUMN (THAT WE ARE USING)

IS ALWAYS THE SAME

SIGN AS MIDDLE TERM

S = SAME SIGNS

D = DIFF. SIGNS

7. $x^2 + 24x + 80$

$(x+4)(x+20)$

PSD

80

P	S	D
1.80	81	79
2.40	42	38
4.20	24	16
5.16	21	11
8.10	18	2

8. $x^2 - 6x - 40$

$(x+4)(x-10)$

PSD

40

P	S	D
1.40	41	39
2.20	22	18
4.10	14	6
5.8	13	3

9. $x^2 - 6xy - 40y^2$

$(x+4y)(x-10y)$

40