Factoring Reminders - Part 2

① Difference of squares

$$x^2 - y^2$$

$$(x + y)(x - y)$$

$$= x^2 - xy + xy - y^2$$

ex. 1 $25x^2 - 36m^2$

$\sqrt{25x^2} = 5x$ $\sqrt{36m^2} = 6m$

$$(5x - 6m)(5x + 6m)$$

ex 2. $81p^2 - 64t^2$

$$= (9p + 8t)(9p - 8t)$$

② trinomials → $ax^2 + bx + c$

$2x^2 - x - 3$

(+) -1

(×) -6 $\quad 1, 6$ / $2, -3$

$2x - 3$ (+) -1 $\quad -6$ (×)

DECOMPOSITION

$$= 2x^2 + 2x \mid -3x - 3$$

GCF $2x$ $\quad 2x$ $\quad -3$ $\quad -3$ GCF

GCF $2x$ $2x \mid -3$ -3 GCF

$= (2x)(x+1)(-3)(x+1)$

SAME

$= (x+1)(2x-3)$

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ex. 2 $2x^2 + 11x + 9$

(+) 11

(×) 18

1, 18
2, 9
3, 6

$= 2x^2 + 2x \mid +9x + 9$

$2x \quad 2x \quad 9 \quad 9$

$= (2x)(x+1)(+9)(x+1)$

$= (x+1)(2x+9)$

BOX method

ex. 1 $9x^2 - 5x - 4$ (1) (2)

(+) -5 (×) -36

1, 36
2, 18
3, 12

$4x - 9x$ (3)

6, 6

GCF $x \quad -1$

$9x$ → (1)	$9x^2$	$-9x$ (3)
4 → (3)	$4x$	-4 (2)

$= (x-1)(9x+4)$

6.6

$= (x-1)(9x+4)$

ex.2 $4x^2 - 12x + 5$

$\oplus$ -12 $\circledast$ 20

$1, 20$

$-2, -10$

$4, 5$

GCF $(2x - 5)$

$2x$	$4x^2$	$-10x$
-1	$-2x$	5

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

DIVISION method

ex.1 $6x^2 + x - 2$ $\oplus$ 1 $\circledast$ -12

$1, 12$

$2, 6$

$-3, 4$

$= (x - \frac{3}{6})(x + \frac{4}{6})$

$= (x - \frac{1}{2})(x + \frac{2}{3})$

$= (2x-1)(3x+2)$

ex.2 $2x^2 - 9x + 4$ $\oplus$ -9 $\circledast$ 8

$-1, -8$

$2, 4$

$= (\quad)(\quad)$

$= (x - \frac{1}{2})(x - \frac{8}{2})$

$= (2x - 1)(x - 4)$

homework — (C) Trinomials
(D) Diff of sq.