

$$96k^3 + 168k^2 - 80k - 140$$

$$\text{GCF} = 4$$

$$4(24k^3 + 42k^2 - 20k - 35)$$

$$4(6k^2 - 5)(4k + 7)$$

(27)

$$6m^3 + 5m^2 + 42m + 35$$

$$(m^2 + 7)(6m + 5)$$

$$4(24k^3 + 42k^2 - 20k - 35)$$

$$6k^2(\underline{4k+7}) - 5(\underline{4k+7})$$

$$4(4k+7)(6k^2-5)$$

$$\textcircled{16} \quad -12n^2 + 28n + 40$$

$$-4(3n^2 - 7n - 10)$$

$$-30n^2$$

$$\begin{array}{c} \swarrow \quad \searrow \\ -10n \quad 3n \end{array}$$

$$3n^2 - 10n + 3n - 10$$

$$n(3n - 10) + 1(3n - 10).$$

$$-4(3n - 10)(n + 1)$$

Difference of Squares

$$a^2 - b^2 = (a - b)(a + b)$$

Ex. $25x^2 - 16 = (5x - 4)(5x + 4)$

Sum & difference of cubes

$$a^3 + b^3 = (a + b)^S (a^2 - ab + b^2)^{AP}$$

$$a^3 - b^3 = (a - b)^S (a^2 + ab + b^2)^{AP}$$

Ex. $8x^3 - 27$

$$\underset{a}{(2x)}^3 - \underset{b}{3}^3$$

$$(2x-3)((2x)^2 + 2x \cdot 3 + 3^2)$$

$$(2x-3)(4x^2 + 6x + 9)$$