

Day 1

Factoring Review

① Always look for a GCF 1st!

$$1) \frac{4x^2}{4} + \frac{20x}{4} - \frac{12}{4} = 4(x^2 + 5x - 3)$$

GCF Leftovers

$$2) 4w^2 + 2w = 2w(2w + 1)$$

$2(2ww) + 2(1w)$

$$\frac{4w^2}{2w} + \frac{2w}{2w} = 2w(2w + 1)$$

$$3) \frac{8x^6}{2x^2} + \frac{6x^4}{2x^2} - \frac{2x^2}{2x^2} = 2x^2(4x^4 + 3x^2 - 1)$$

$$4(2xxxxxx) - 3(2xxxx) - 2(1xx)$$

② Difference of 2 squares

- binomial with a minus sign and both terms are perfect square

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144

$$1) x^2 - 64 = (x + 8)(x - 8)$$

$$2) 4a^2 - 49 = (2a + 7)(2a - 7)$$

↑ opposite ↑

$$2) 10z^2 - 9 = (2z + 3)(2z - 3)$$

$$ax^2 + bx + c$$

③ Trinomials where $a = 1$

★ see what multiplies to get c
and adds to get b .

$$\frac{2}{1/2} \quad 1.) \quad x^2 + 3x + 2 = (x + 2)(x + 1)$$

$1 \cdot 2 = 2$ $1 + 2 = 3$

$$2.) \quad x^2 + 7x + 10 = (x + 5)(x + 2)$$

$$3.) \quad x^2 - 3x - 40 = (x + 5)(x - 8)$$

$$4.) \quad x^2 + 1x - 20 = (x + 5)(x - 4)$$

$$5.) \quad x^2 - 10x + 24 = (x - 6)(x - 4)$$

$$6.) \quad x^2 - 3x + 2 = (x - 1)(x - 2)$$

same s

as the m

④ Trinomials where $a \neq 1$

$$1.) \quad \frac{2a^2}{2} - \frac{16a}{2} + \frac{32}{2}$$

$$2(a^2 - 8a + 16)$$

$$2(a - 4)(a - 4)$$

OR

$$2(a - 4)^2$$

look for c
GCF 1st

$$\begin{array}{r|l} 16 & \\ -1 & -16 \\ -2 & -8 \\ -4 & -4 \end{array}$$

$$2) \quad 2z^2 + 1z - 28$$

$$2(-28) = \frac{-5}{-7}$$

$$(2z-7)(2z+8)$$

airplane
method

$$(2z-7)(z+4)$$

$$3) \quad 3x^2 + 31x + 36$$

$$3(36) = 1$$

$$(3x+4)(3x+27)$$

$$(3x+4)(x+9)$$

$$4.) \quad 18x^4 + 24x^3 - 10x^2$$

$$2 \cdot 9x \cdot x + 2 \cdot 12x \cdot x - 2 \cdot 5 \cdot x$$

$$2x^2(9x^2 + 12x - 5)$$

$$9(-5) =$$

$$2x^2 \left(\frac{9x-3}{3} \right) \left(\frac{9x+15}{3} \right)$$

$$2x^2(3x-1)(3x+5)$$