

Name: _____ Block: _____

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1. Expand
 $(x + 1)^3$

2. Factor
 $9x^2 - 4y^2$

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

1. Expand
 $(x + 1)^3$

$$= (x+1)(x+1)(x+1)$$

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

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

$$= x^3+x^2+2x^2+2x+x+1$$

$$= x^3 + 3x^2 + 3x + 1$$

2. Factor
 $9x^2 - 4y^2$

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

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

3. Factor

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

Decomposition!

2#s: multiply to 12
 add to -7

#s: -3, -4

$$= 3x^2 - 3x - 4x + 4$$

$$= 3x(x-1) - 4(x-1)$$

$$= (3x-4)(x-1)$$