

5.4 Factoring

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

$$\boxed{ax^2 + bx + c}$$

Ex 2 $x^2 + 8x + 7$

$$x^2 + 7x + x + 7$$

$$\underline{x(x+7) + 1(x+7)}$$

$$(x+7)(x+1)$$

$$\begin{array}{r} \frac{7}{7} \times \frac{1}{1} = 7^{(ac)} \\ \frac{7}{7} + \frac{1}{1} = 8^b \end{array}$$

$$\frac{\Sigma x^3}{x^2 - 17x + 72}$$

$$(x - 8)(x - 9)$$

$$\begin{array}{r} _ \times _ = 72 \\ _ + _ = -17 \end{array}$$

$$\frac{\Sigma x^4}{x^2 - x - 12}$$

$$(x + 3)(x - 4)$$

$$\begin{array}{r} \underline{3} \times \underline{-4} = -12 \\ \underline{3} + \underline{-4} = -1 \end{array}$$

$$\frac{\Sigma x^5}{x^2 + 3x - 10}$$

$$(x - 2)(x + 5)$$

Perfect Square Trinomials

$$ax^2 + bx + c$$

$$a^2 + 2ab + b^2 = (ax + b)^2$$

$$(ax + b)(ax + b)$$

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

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

Ex 5

$$x^2 - 9$$
$$(x)^2 - (3)^2$$

$$(x - 3)(x + 3)$$

Ex 6 /

$$64x^2 - 25$$

$$(8x - 5)(8x + 5)$$

Ex 8/

$$9x^2 - 42x + 49$$

$$(3x - 7)(3x - 7)$$

$$(3x - 7)^2$$

Ex 9/

$$64x^2 + 16x + 1$$

$$(8x + 1)(8x + 1)$$

$$(8x + 1)^2$$

$$3x^2 - 16x + 5$$

$$\begin{array}{r} \underline{-15} \times \underline{-1} = 15 \\ \underline{-15} + \underline{-1} = -16 \end{array}$$

ac

$$(3x^2 - 15x)(-x + 5)$$

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

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

Perfect Square

-4
9

Pg 263
20-46E
52-66E

Foil

$$(2x + 3)(x - 4)$$
$$2x^2 - 8x + 3x - 12$$

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$$2x^2 - 5x - 12$$

First
Outside
Inside
Last