

FACTORIZING POLYNOMIALS

- 1) $x^3 - 9x^2 + 2x - 18$ $(x^2 + 2)(x - 9)$
- 2) $24x^5 + 52x^4 - 20x^3$ $4x^3(2x + 5)(3x - 1)$
- 3) $81x^2 - 16$ $(9x + 4)(9x - 4)$
- 4) $4x^2 + 36x + 81$ $(2x + 9)(2x + 9) = (2x + 9)^2$
- 5) $27x^3 - 9x^2 + 12x$ $3x(9x^2 - 3x + 4)$
- 6) $x^2 - x - 30$ $(x - 6)(x + 5)$
- 7) $10x^2 + 19x + 6$ $(2x + 3)(5x + 2)$
- 8) $8x^3 - 27$ $(2x - 3)(4x^2 + 6x + 9)$
- 9) $49x^2 - 81$ $(7x + 9)(7x - 9)$
- 10) $144x^2 - 384x + 256$ $16(3x - 4)^2$
- 11) $4x^3 - 12x^2 - 25x + 75$ $(2x + 5)(2x - 5)(x - 3)$
- 12) $21x^2 - 75x - 36$ $3(7x + 3)(x - 4)$
- 13) $24x^3 + 3$ $3(2x + 1)(4x^2 - 2x + 1)$
- 14) $9x^2 - 24x + 16$ $(3x - 4)(3x - 4) = (3x - 4)^2$
- 15) $18x^3y^2 - 4x^2y^4 + 8xy^5$ $2xy^2(9x^2 - 2xy^2 + 4y^3)$
- 16) $x^4 + 7x^2 + 10$ $(x^2 + 5)(x^2 + 2)$

$$x^3 - 9x^2 + 2x - 18$$

$$(x^2 + 5)(x^2 + 2)$$

$$24x^5 + 52x^4 - 20x^3$$

$$\underbrace{\hspace{10em}}_{(x^2 + 2)(x - 9)}$$

$$81x^2 - 16$$

$$4x^3(3x-1)(2x+5)$$

$$27x^3 - 9x^2 + 12x$$

$$\underbrace{\hspace{15em}}_{(2x+9)^2}$$

$$x^2 - x - 30$$

$$\underbrace{\hspace{10em}}_{3x(9x^2 - 3x + 4)}$$

$$10x^2 + 19x + 6$$

$$\underline{\hspace{10em}}$$
$$(x+5)(x-6)$$

$$8x^3 - 27$$

$$(2x + 3)(5x + 2)$$


$$49x^2 - 81$$

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

$$144x^2 - 384x + 256$$

$$(7x+9)(7x-9)$$

$$4x^3 - 12x^2 - 25x + 75$$


$$16(3x - 4)^2$$

$$21x^2 - 75x - 36$$

$$\underbrace{(2x-5)(2x+5)(x-3)}$$

$$24x^3 + 3$$



$$3(7x+3)(x-4)$$

$$9x^2 - 24x + 16$$


$$3(2x+1)(4x^2-2x+1)$$

$$18x^3y^2 - 4x^2y^4 + 8xy^5$$

$$\underbrace{\hspace{10em}}_{(3x-4)^2}$$

$$X^4 + 7X^2 + 10$$

$$2xy^2(9x^2 - 2xy^2 + 4y^3)$$