Factor Tree
GCF
2
3
4
Difference of Perfect Squares
Trinomials
Grouping

Greatest Common Factor

① $3x^2 - 9x$

$3x(1x - 3)$

② $16a^2b^3 - 4ab^2 + 8a^5b^5$

$4ab^2(4ab - 1 + 2a^4b^3)$

Factoring Trinomials

(1) $x^2 - 3x - 28$

$1 \cdot 28$
$2 \cdot 14$
$4 \cdot 7$

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

(2) $x^2 + 7x + 10$

$1 \cdot 10$
$2 \cdot 5$

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

Factoring Trinomials

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

$x^2 - 5x - 6$

1·6
2·3

$\left(x + \frac{1}{2}\right)\left(x - \frac{6}{2}\right)$

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

(4) $9x^2 - 24x + 16$

$x^2 - 24x + 144$

1·144
2·72
3·48
4·36
6·24
8·18
12·12

$\left(x - \frac{12}{9}\right)\left(x - \frac{12}{9}\right)$

$\left(x - \frac{4}{3}\right)\left(x - 4/3\right)$

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

$(3x-4)^2$

Difference of Perfect Squares

① $x^2 - 9$

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

② $x^2 - 81$

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

③ $x^2 + 25$

X

④ $4x^2 - 121$

$(2x+11)(2x-11)$

⑤ $49x^2 - 100$

$(7x-10)(7x+10)$

Grouping

① $(x^3+x^2)+(3x+3)$

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

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

② $(x^2+2x)+(-4x-8)$

$x(x+2)-4(x+2)$

$(x+2)(x-4)$

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Complete Factorization

① $3x^2 - 27$

$3(x^2 - 9)$

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

② $2x^2 - 8x - 10$

$2(x^2 - 4x - 5)$

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

Complete Factorization

(3) $x^3 - 5x^2 - 4x + 20$