Factor, Look for GCF:

$12x^3 - 6x^2 + 24x$

$\frac{12x^3}{6x} \quad \frac{6x^2}{6x} \quad \frac{24x}{6x}$

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

$8x^3 - 4$

$\frac{8x^3}{4} \quad \frac{4}{4}$

$4(2x^3 - 1)$

Factor, Difference of 2 squares:

$x^2 - 16$

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

$81x^6 - 225y^4$

$(9x^3 - 15y^2)(9x^3 + 15y^2)$

Perfect Square Trinomials

$k^2 + 6k + 9$

$(k+3)(k+3) = (k+3)^2$

$3k$

$+ 3k$

$6k$ ✓

$25x^6 - 60x^3y^2 + 36y^4$

$(5x^3 - 6y^2)(5x^3 - 6y^2)$

$-30x^3y^2$

$-30x^3y^2$

Factoring Trinomials -

$x^2 + 7x + 12$

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

12

1	12
2	6
3	4

-1	-12
-2	-6
-3	-4

$x^2 - 1x - 12$

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

-12

-1	12
-2	6
-3	4

1	-12
2	-6
3	-4

Factoring Trinomials where a>1 (Fake Factoring)

$2x^2 + 5x + 3$

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

2

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

6

1	6
2	3

$3t^2 - 5t - 12$

$(3t+4)(3t-9)$

3

$(3t+4)(t-3)$

-36

1	-36
2	-18
3	-12
4	-9

Factoring by grouping - use when have 4 terms

$(rq - 2rp)(+5q - 10p)$

r r 5 5

$r(q-2p) + 5(q-2p)$

$q-2p$ $q-2p$

$(q-2p)(r+5)$

$2xy + 6x - 3ry - 9r$

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

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