# 2.4 Factoring Quadratic Expressions

To factor a polynomial is to write it as a product of its factors.

Steps:

1) Factor out GCF first if there is one.
2) Factor the remaining trinomial or difference of squares (if possible)
3) Write your answer as a product.

Factor.

Ex ① $\frac{20x^2}{4x} + \frac{4x}{4x}$ GCF: $4x$

$4x(5x+1)$

② $\frac{2x^2}{x} - \frac{x}{x}$ GCF: $x$

$x(2x-1)$

③ $\frac{6x^2}{3} + \frac{3x}{3} - \frac{9}{3}$ GCF: $3$

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

④ $\frac{-2x^2}{-2} + \frac{4x}{-2} - \frac{8}{-2}$ GCF: $-2$

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

* Yourtry: $5x^2+10x$

$5x(x+2)$

$4x^2-2x+8$

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

⑤ $x^2 - 10x + 24$

1·24
2·12
3·8
4·6

$(x - 4)(x - 6)$

$-4x$

$-6x$

⑥ $2x^2 + 11x + 14$

1·14
2·7

$(2x + 7)(x + 2)$

$7x$

$4x$

⑦ $6x^2 - 13x + 2$

$2x \cdot 3x$
$-1 \cdot -6x$

$(6x - 1)(x - 2)$

$-1x$

$-12x$

⑧ $8x^2 - 13x - 6$

$4x \cdot 2x$
$8x \cdot 1$

1·6
2·3

$(8x + 3)(x - 2)$

$3x$

$-16x$

You try:

ⓐ $x^2 - 11x + 18$

ⓑ $3x^2 - 2x - 8$