

## FACTORIZING POLYNOMIALS

Factoring is one of the most useful skills in algebra. It is also useful in calculus, when calculating the limits of functions, and also in finding the critical points of functions.

Factor the following:

①  $2x^2 - 3x - 2$

②  $x^2 - 25$

③  $32 - 2x^2$

④  $x^3 - 27$

⑤  $8 + x^3$

⑥  $2x^2 + 8x$

⑦  $x(x+1) + 2x^2(x+1)$

⑧  $16 - x^4$

⑨  $4x^2 - 4x + 1$

⑩  $(x+1)^2(2x+3) + (x+1)(2x+3)^2$

⑪  $24x^3 + 2x^2 - 12x$

⑫  $8x^3 + 6x^2 + 4x + 3$

## Answers to the factoring problems:

- ①  $(2x+1)(x-2)$
- ②  $(x+5)(x-5)$
- ③  $2(4-x)(4+x)$
- ④  $(x-3)(x^2+3x+9)$
- ⑤  $(2+x)(4-2x+x^2)$
- ⑥  $2x(x+4)$
- ⑦  $x(x+1)(2x+1)$
- ⑧  $(2-x)(2+x)(4+x^2)$
- ⑨  $(2x-1)^2$
- ⑩  $(x+1)(2x+3)(3x+4)$
- ⑪  $2x(3x-2)(4x+3)$
- ⑫  $(2x^2+1)(4x+3)$