

## Useful Formulas

Here is a list of formulas that may help when you do computations. You will be provided with a sheet of the same formulas in exams.

In each of the following formulas,  $a$  and  $b$  are real numbers

1.  $(a + b)^2 = a^2 + 2ab + b^2$

2.  $(a - b)^2 = a^2 - 2ab + b^2$

3.  $a^2 - b^2 = (a - b)(a + b)$

4.  $(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$

5.  $(a - b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$

6.  $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

7.  $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$