

Section 3: Partial fractions

Crucial points

- 1. Make sure that you know the correct form for each type of partial fractions**
Check that you know the form for a fraction with linear factors and for a fraction with a repeated factor.
- 2. Remember to check your answer**
You can always check your partial fractions by adding them up and making sure that you get the original fraction.
- 3. Think about whether to use substitution or equating coefficients in each case**
You can make things very much easier by a sensible choice of value for substitution. Remember that you can use a combination of substitution and equating coefficients – sometimes after one or two substitutions, the other constants can be found very quickly by equating coefficients.
- 4. When using partial fractions to find binomial expansions, make sure the expression in each bracket is in the correct form**
You can only use the binomial expansion for negative values of n if the expression in the bracket is in the form $1 \pm kx$.
- 5. Make sure that you know for what values of x an expansion is valid**
You need to write down the values of x for which the expansion is valid for each part of the expansion, and then find the values of x for which both expressions are true.