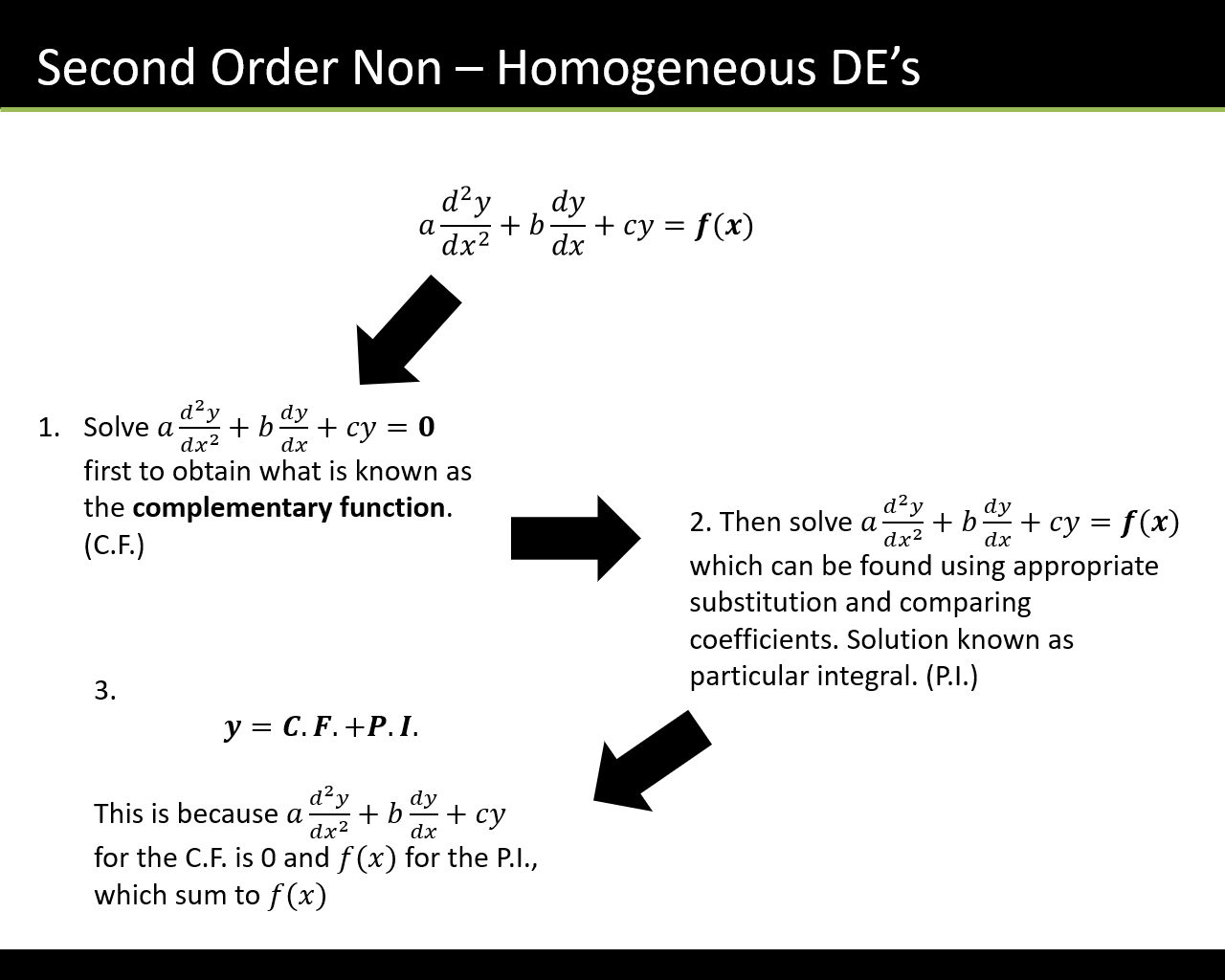
Second Order Non-Homogenous DE’s

Non – homogeneous, second order DE’s have the form

Question: Start by considering the solution to the 1st order DE:

Consider another example with the same LHS:

Solving a Second Order, Non – Homogeneous DE



How do we find the Particular Integral?

To find a particular integral you need to establish a **trial function** whose form depends on the form of

|  |  |
| --- | --- |
| Function ( | Form of Particular Integral |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

The Particular Integral is a function which satisfies the original DE. We take our trial form and sub it back into the DE to find the value of the coefficients.

Example

Find the **particular integral** of the differential equation

Example:

Find the **general solution** of the differential equation

Example:

Find the **general solution** of the differential equation

Example:

Find the **general solution** of the differential equation

**Interesting (and important) Example!**

Find the **general solution** of the differential equation

Example:

Find the **general solution** of the differential equation