1 Inhomogeneous Linear Equations with Constant Coefficients (Second Example)

Inhomogeneous, linear ODEs with constant coefficients are among the most straigtforward to solve, although the algebra can get messy. This content should have been covered in your Differential Equations course (MTH 256 or equiv.). If you need a review, please see: The Method for Inhomogeneous Equations or your differential equations text.

For the following inhomogeneous linear equation with constant coefficients, find the general solution for $y(x)$.

$$y'' + 2y' - y = \sin x + \cos 2x$$