

Problem Set 10.1

---

Solve the following differential equations.

1.  $y'' - 6y' + 10y = e^{3x}$
2.  $y'' - 4y' + 5y = x$
3.  $y'' - 8y' + 20y = e^{4x} \cos(2x)$
4.  $y'' + 9y' = x^3 - x$
5.  $y''' + 3y'' + 3y' + y = e^{-x}$
6.  $y''' + y'' + 4y' + 4y = xe^{-x}$
7.  $y'' + 4y' + 8y = e^{-2x} \cos(2x) + 3e^{-2x} \sin(2x)$
8.  $y''' + y'' = x^2 - x + 5$