

4.3 Auxiliary Equations with Complex Roots

1. Find a general solution to the differential equations

(a) $y'' + 2y' + 5y = 0$

(b) $y'' - 3y' - 11y = 0$

2. Solve the initial value problem

(a) $y'' + 9y = 0$; $y(0) = 1$, $y'(0) = 1$

(b) $y'' - 2y' + 2y = 0$ $y(\pi) = e^\pi$, $y'(\pi) = 0$