

1. Solve the following differential equations.

(a) $y'' - 2y' + 26y = 0$, $y(0) = -3$, $y'(0) = 7$.

(b) $y'' + y' = 0$, $y(0) = -4$, $y'(0) = -2$.

(c) $y'' - 2y' + y = 0$, $y(0) = -4$, $y'(0) = -6$.

(d) $y'' - 3y' - 4y = 0$, $y(0) = -4$, $y'(0) = -6$.

(e) $y'' - 4y' = 0$, $y(0) = -6$, $y'(0) = -12$.

(f) $y''' - 3y'' + 3y' - y = 0$, $y(0) = -2$, $y'(0) = -3$, $y''(0) = -6$.

(g) $y''' + 2y'' - 7y' + 4y = 0$, $y(0) = 2$, $y'(0) = -4$, $y''(0) = 15$.

(h) $y^{(4)} + 18y'' + 81y = 0$.