

1. Find the solution of the initial value problem $y' - 2y = e^{2t}$, $y(0) = 2$.

a) $e^t(t+1)$

b) $e^{2t}(t+1)$

c) $e^t(t-1)$

d) $e^{2t}(t-1)$

e) $e^{2t}(t+2)$

f) $e^{2t}(t-2)$

g) e^{2t}

h) e^t

i) $2e^t$

2. Find an implicit solution of $2x + 3 + (2y - 2)\frac{dy}{dx} = 0$

a) $x^2 + x + y^2 + y = C$

b) $x^2 - x + 3y^2 - y = C$

c) $x^2 + 3x + y^2 - 2y = C$

d) $x^2 - 3x + y^2 + 2y = C$

e) $x^2 + 2x + y^2 - 3y = C$

f) $x^2 - 2x + y^2 + 3y = C$

g) $x^2 - 3x - y^2 + 2y = C$

h) $x^2 + 2x - y^2 - 3y = C$

i) $x^2 - 2x - y^2 + 3y = C$

3. Find $y(t)$, the general solution of $y'' - 6y' + 9y = 0$.

a) $c_1 e^{3t} + c_2 t e^{3t}$

b) $c_1 e^{3t} + c_2 e^{-3t}$

c) $c_1 e^{-3t} + c_2 t e^{-3t}$

d) $c_1 t + c_2 e^{3t}$

e) $c_1 t + c_2 e^{-3t}$

f) $c_1 e^t + c_2 e^{-t}$

g) $c_1 e^t + c_2 t e^t$

h) $c_1 e^{-t} + c_2 t e^{-t}$

i) $c_1 t e^{3t} + c_2 t^2 e^{3t}$