HW03

In Problems 7–16, obtain the general solution to the equation.

7. $\frac{}{dx} - y - e^{3x} = 0$

12. $\frac{dy}{dx} = x^2 e^{-4x} - 4y$

9. $\frac{dr}{d\theta} + r \tan\theta = \sec\theta$

In Problems 17–22, solve the initial value problem.

17. $\frac{dy}{dx} - \frac{y}{x} = xe^x, \qquad y(1) = e - 1$

19. $t^2 \frac{dx}{dt} + 3tx = t^4 \ln t + 1\,, \qquad x(1) = 0$