Answer to Question #89355 – Math – Differential Equations

Question

1. Solve the general solution of $\frac{dy}{dx} = e^x + x + \sin x$

Solution

Given,

$$\frac{dy}{dx} = e^x + x + \sin x$$

Integrating with respect to 'x', we get

$$y(x) = \int (e^x + x + \sin x)dx + C,$$

where C is an integration constant;

$y(x) = e^x + \frac{x^2}{2} - \cos x + C$ is the required general solution.

Answer: $y(x) = e^x + \frac{x^2}{2} - \cos x + C.$