Answer on Question #69652 – Math – Differential Equations

Question

Find the value of m so that the function $y = e^{mx}$ is a solution of the differential equation

$$y' + 2y = 0$$

Solution

$$y' = me^{mx}$$

$$me^{mx} + 2e^{mx} = 0$$

$$e^{mx}(m + 2) = 0$$

$$e^{mx} \neq 0, \text{ so}$$

$$m = -2$$

Answer: $m = -2.$