Question #54710, Math / Differential Equations

Find the differential equation of the family of curves y e (Acos x Bsin x) x = +
where A and
B are arbitrary constants and hence solve the equation.

Answer.

$$y = Acosx + Bsinx$$

$$y' = -Asinx + Bcosx$$

$$y'' = -Acosx - Bsinx$$

So $y'' + y = 0$